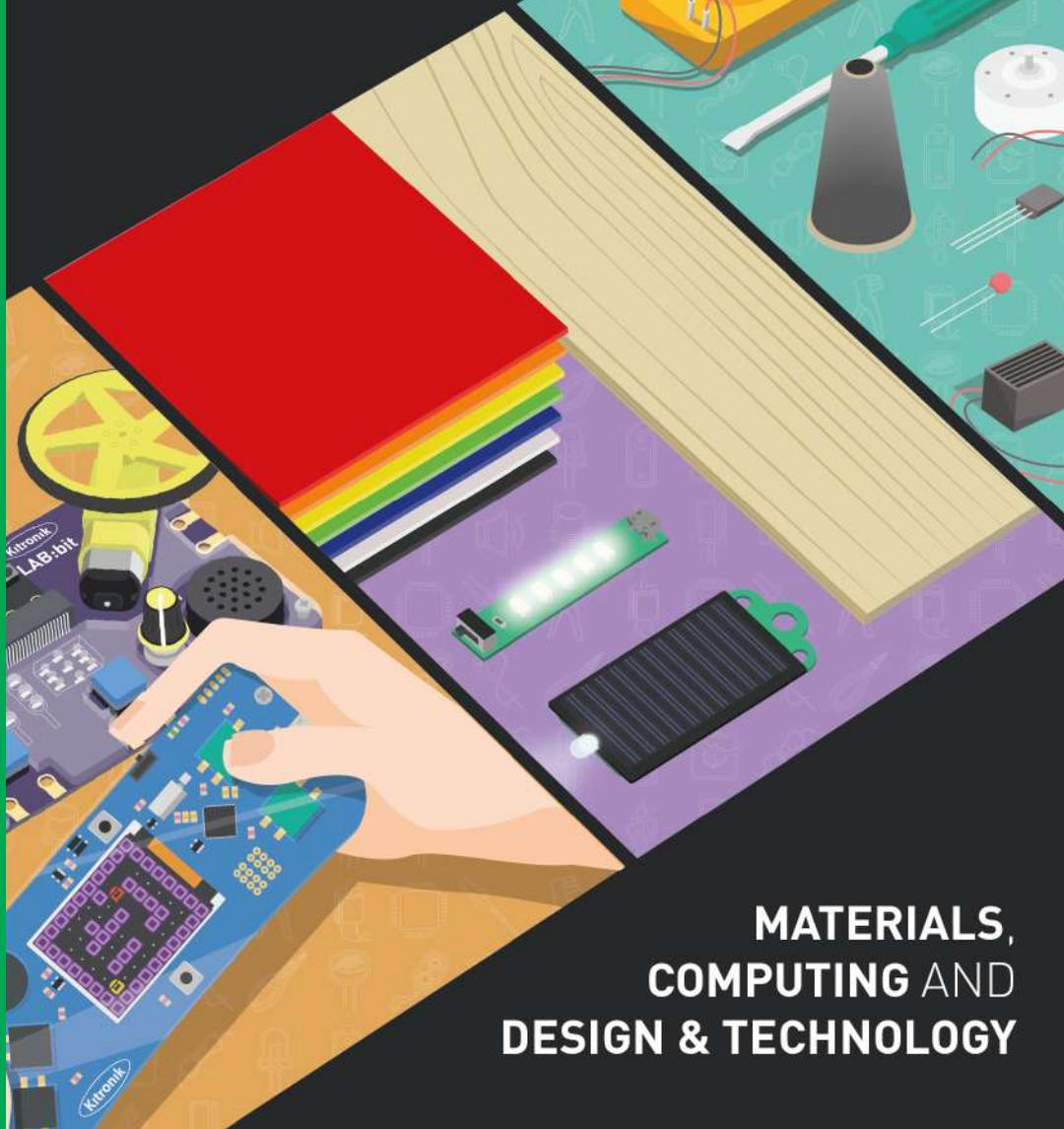




Kitronik

# CATALOGUE 2021/22



**MATERIALS,  
COMPUTING AND  
DESIGN & TECHNOLOGY**

CATALOGUE 2021/22

# WELCOME TO KITRONIK

Kitronik create high quality products and resources for education and makers.

Kitronik aims to inspire and engage people of all abilities, to further their knowledge of coding and design by offering a well-designed, well manufactured product range and free resources. All backed by detailed product descriptions, knowledgeable staff and fast delivery.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## ORDERING

Please quote stock codes on all orders.

**Post to:** Kitronik Ltd,  
Unit 12a, Glaisdale Point,  
Glaisdale Parkway,  
Nottingham, NG8 4GP

**VAT:** All prices exclude VAT which  
should be added at the current rate.

**Accounts:** All educational establishments  
have automatic account facilities.

**Phone:** 0845 8380781 or 0115 9704243  
**Fax:** 0845 8380782  
**Email:** sales@kitronik.co.uk  
**Online:** Call our sales team to activate  
online account ordering.



## DELIVERY



[www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info)

Delivery and handling will be charged as follows:

| Order value      | Delivery UK<br>Most locations | Delivery UK<br>Northern Ireland | Delivery UK<br>Remote locations* |
|------------------|-------------------------------|---------------------------------|----------------------------------|
| Less than £40    | £3.95                         | £3.95                           | £3.95                            |
| £40 - £200       | Free                          | £12.00                          | £15.00                           |
| More than £200   | Free                          | Free                            | Free                             |
| Special orders † | £6.50                         | £12.00                          | £18.00                           |

\* Remote locations include offshore, highlands, plus other rural areas. See website for full list. Order by 3:00pm for same day dispatch and usually next day delivery. See terms and conditions for full details.

† Acrylic, wood, cork, Polypropylene, HIPS & Styrofoam orders (except A4 & 300x200mm sheets).

TALK TO OUR **CUSTOMER SERVICE TEAM**

# WE'RE HERE TO HELP YOU!

In order to best manage customer expectations and ensure a consistent and hassle-free service, we are proud to have an **exceptional and knowledgeable Customer Service and Support Team**. Their passion for delivering fast customer response times, whether via Phone or Email, is exceptional.



Call us

**0845 8380781** or **0115 9704243**

Email us

**sales@kitronik.co.uk**

## REQUEST A **FREE SAMPLE KIT**

We are happy to provide you with a free sample of one of our great project kits for you to evaluate. These can be requested online or, alternatively, call our sales team. The samples service is available for any self-assembly electronic kit that is marked as exclusive to Kitronik, with the exception of high value kits. Please see the link below for the full list of samples available.



[www.kitronik.co.uk/samples](http://www.kitronik.co.uk/samples)

## TRY OUR **CUSTOM PCB SERVICE**

Let us take the trouble out of manufacturing your school's PCBs and you can share the volume savings we receive. For details on this service visit the link below (and try our price estimator) or alternatively call our sales team.

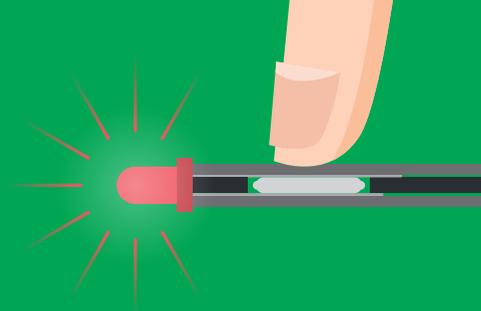


[www.kitronik.co.uk/custom-pcbs](http://www.kitronik.co.uk/custom-pcbs)

# 01 EASY BUILD KITS

Kits with ten parts or less, including simple torches, USB lights, a bike light, steady hand games and more.

PAGE 06



# 02 INTERMEDIATE KITS

Kits that are more complex and normally include an IC, featuring a range of amplifiers, FM radio, solar light, a record playback kit and more.

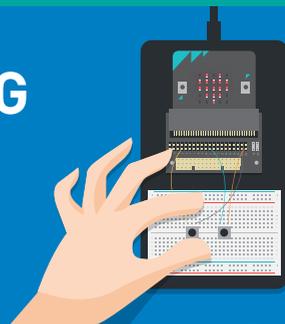
PAGE 30



# 03 BBC micro:bit & CODING

Coding products and projects, including the BBC micro:bit & accessories, Arduino, Raspberry Pi Pico and PICAXE® kits, chips & cables.

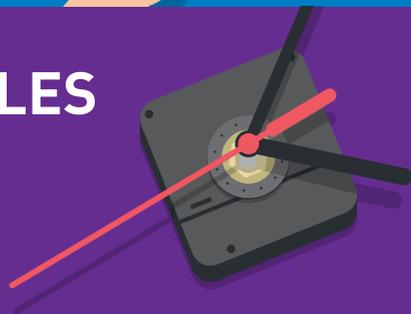
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# 04 OTHER KITS & MODULES

Featuring buggy kits, solar projects, modules, breakout boards, clocks and more.

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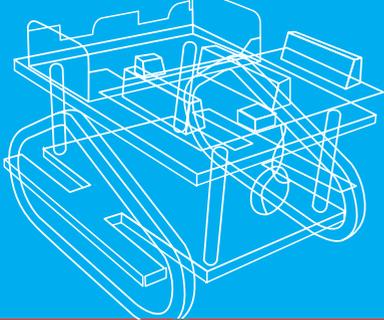


# 05 E-TEXTILES

Add electronics to your textiles project with Electro-Fashion sewable electronic kits & parts.

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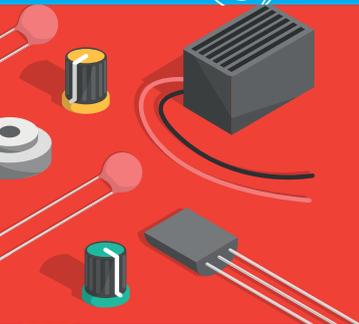




## ROBOTICS 06

Includes servos, motors & accessories, gearboxes, wheels, casters, chassis, propellers and more.

PAGE 138



## COMPONENTS 07

Featuring batteries & holders, power supplies, connectors & cables, resistors, capacitors, optoelectronics & LEDs, audio accessories, switches and more.

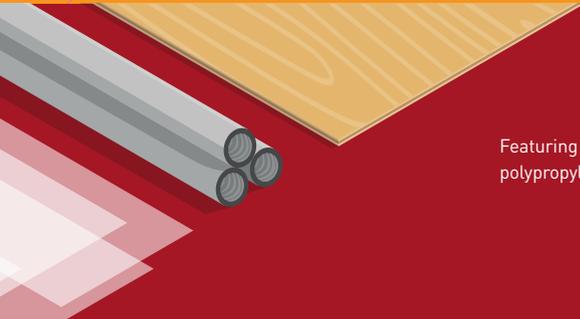
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## TOOLS & TEST EQUIPMENT 08

Including soldering irons, solder, wire cutters & strippers, screwdrivers, multimeters and lab supplies.

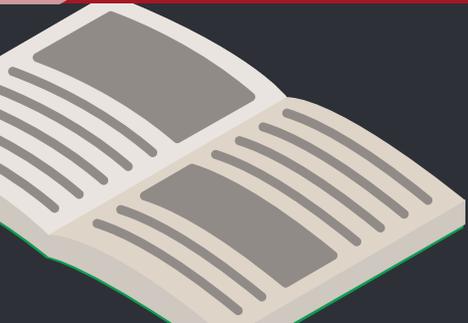
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## MATERIALS 09

Featuring many different types of Perspex®, plus PVC, HIPS, polypropylene, laser foam, plywood & MDF sheets and more.

PAGE 194



## RESOURCES

Find your perfect product with our Kit Selector and Index. Also features our T&Cs and Quick Reference Guide.

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# 01 EASY BUILD KITS

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## DARK ACTIVATED COLOUR CHANGING LED KIT



The colour changing LED in this kit is automatically illuminated and starts to cycle through various patterns when the light sensor has detected that it's dark.

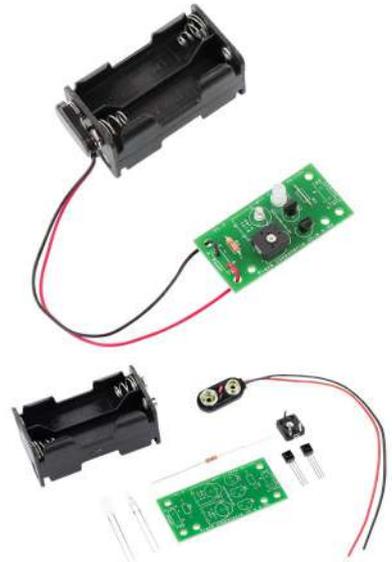
The kit is based on the light activated board, but this kit is also supplied with a colour changing LED, battery clip & battery cage.



Requires 4x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2120 | £2.80 | £2.15 | £1.75 | £1.66 | £1.58 |

\* Price shown includes bulk buy discount



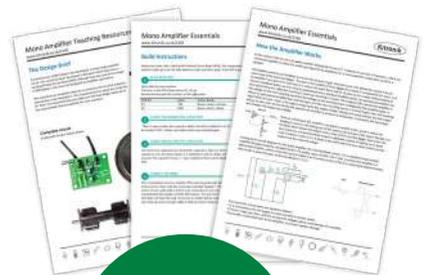
## TEACHING NOTES



[www.kitronik.co.uk/teach](http://www.kitronik.co.uk/teach)

Where you see the scroll symbol (as above) the kit is supported by comprehensive teaching notes on our website. These comprise of printable resources, covering activities from design brief to evaluation.

These can include manufacturing an enclosure, build instructions for the project, debugging the project, and explanations of how it works. This wealth of information will make your lesson planning easier as we try to do the hard work for you.



## BULK BUY DISCOUNTS

Where you see the star symbol (as above) the kit is eligible for additional bulk discounts, when you are buying 200 or more Kitronik project kits.

Different kits can be mixed to give the required quantity. The additional discount will be applied to appropriate price break for the quantity of each kit purchased.

ORDER  
200+ KITS  
**5% OFF\***

ORDER  
300+ KITS  
**10% OFF\***

\* the 50+ price

## LEARN TO SOLDER LED KIT – PACK OF 25



The perfect way to introduce soldering to a class. Four resistors and one LED gives ten easy solder joints to practice on, and introduces the concept of component orientation.

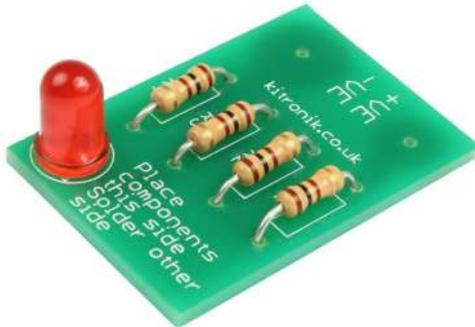
Once built, students can check their circuit by touching the PCB to the 9V battery (supplied). With the addition of a battery snap, students can take home their own basic torch.

**i** This kit is supplied as a pack of 25 and requires soldering.

**£** Just 40p per student!

The kit contains:

- 25 x PCBs.
- 25 x Red LEDs.
- 100 x 100Ω Resistors.
- 1 x 9V PP3 Battery.



^ The contents of the pack.



^ Testing the PCB board with the 9V PP3 battery.

< The completed PCB board.

| Description                          | Code    | 1+     | 5+    |
|--------------------------------------|---------|--------|-------|
| Learn to Solder LED Kit – Pack of 25 | 2163    | £10.00 |       |
| Standard PP3 clip leads – Pack of 25 | 2257-25 | £2.35  |       |
| PP3 battery – Pack of 10             | 2211-10 | £5.20  | £4.90 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## VIBROBUG



This Vibrobug is supplied in kit form and requires a small amount of soldering as well as some mechanical assembly. A coin cell powers a small off centre motor which vibrates the whole body of the bug and causes it to move around a table.

The kit contains:

- A pre-cut piece of Perspex® containing the bug parts.
- A miniature 3V vibrating motor.
- A coin cell power board kit.
- A set of fixings (4 nuts & bolts).
- A coin cell battery.



### BULK BUYING

Download cutting files and parts list from [www.kitronik.co.uk/vibrobug](http://www.kitronik.co.uk/vibrobug)

| Colour | Code | 1+    | 5+    |
|--------|------|-------|-------|
| Red    | 2150 | £7.60 | £6.95 |
| Black  | 2151 | £7.60 | £6.95 |



↗ Example of kit powering bike light

## COIN CELL POWER BOARD KIT



A compact 3V power source with an on/off switch. Batteries are included, so with a small amount of soldering you can deliver 20mA current to power kits like our bike light or easy build timer.

Includes coin cell battery.

This kit is supplied as a pack of parts and requires soldering.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2145 | £1.95 | £1.50 | £1.40 | £1.33 | £1.26 |

\* Price shown includes bulk buy discount



↗ Example of a lamp made using the kit.

## COLOUR CHANGING MOOD LIGHT – 60 PACK

KS  
3

This simple but effective mood light requires no soldering, making a simple electronics kit with a power source, switch and LED. At a little over £1 per student it is a very economical and simple starter in electronics. It is just a case of connecting a three AA battery box with integral switch to the LED using a terminal block.

Combine with a diffusing material, such as polypropylene, to create simple but impressive designs.

- i** This project includes:
- 60 x battery box with switch.
  - A pack of terminal blocks.
  - 60 x colour changing LEDs.



Requires 3x AA batteries, available separately.

LOOKING FOR OUR  
**MATERIALS SECTION?**

Skip forward to **page 194**.

| Description                          | Code | 1+     | 10+    |
|--------------------------------------|------|--------|--------|
| Colour changing mood light - 60 pack | 2172 | £62.00 | £56.00 |

# LIGHT OR TEMPERATURE SWITCH PROJECT KIT



This kit is available in two variations, either as a light activated switch or as a temperature activated switch. The output of the board can be used to control other electronic circuits, automatically turning them on when it either becomes light, dark, hot or cold.

The board has space for an LED with current limit resistor (both available separately) which will light when the output turns on. The Darlington pair transistor configuration allows an output current of up to 1/2 an Amp to be controlled.



Operating voltage of 3V to 10V (lower voltages allow for better adjustment of the switching point).



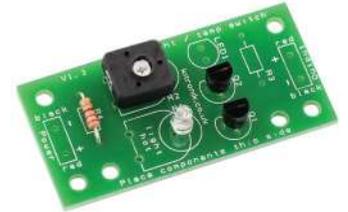
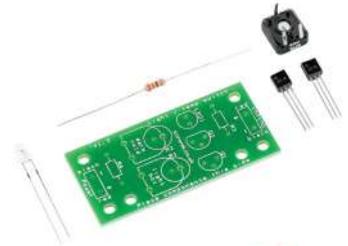
Possible applications include:

- Garden light that switches on automatically at night.
- Drawer alarm, sounds when a dark drawer is opened.
- Line following robot (using 2 light activated boards).
- Babies bath over temperature indicator.
- Automatic fan.

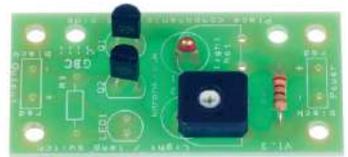
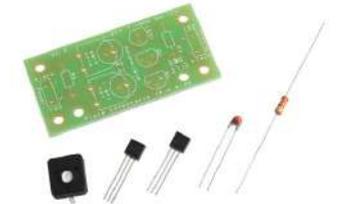


See [www.kitronik.co.uk/2112](http://www.kitronik.co.uk/2112) and [www.kitronik.co.uk/2113](http://www.kitronik.co.uk/2113) for more information.

## ✓ Light switch project



## ✓ Heat switch project



### INPUT

Light/heat sensor



### PROCESS

Darlington pair transistor switch



### OUTPUT

Any device (taking up to 500mA)

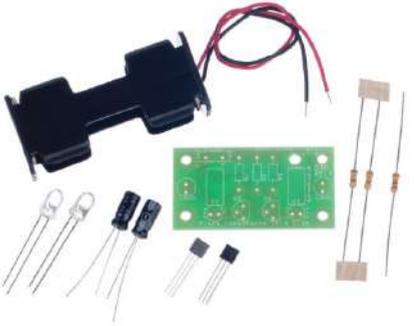
| Description            | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------------------------|------|-------|-------|-------|-------|-------|
| Light activated switch | 2112 | £1.70 | £1.35 | £1.05 | £1.00 | £0.95 |
| Heat activated switch  | 2113 | £2.00 | £1.45 | £1.15 | £1.09 | £1.04 |

\* Price shown includes bulk buy discount

## REAR BIKE LIGHT PROJECT KIT



This easy build bike light kit has just ten parts, making it a good introduction to electronics. The kit uses two ultra bright red LEDs, which flash rapidly, providing a highly visible light. This makes it ideal for use as a rear bike light. Alternatively it can be used as a night safety product or flashing eyes. Some examples of student projects are shown below.



Requires 2x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2106 | £2.15 | £1.55 | £1.30 | £1.24 | £1.17 |

\* Price shown includes bulk buy discount

## PROJECT EXAMPLES - BIKE LIGHTS



**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## AIR FRESHENER PROJECT KIT (TIMED FAN)



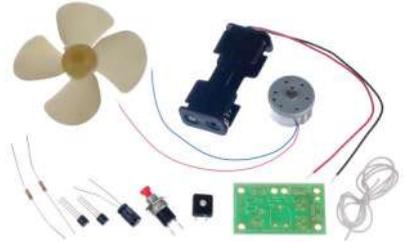
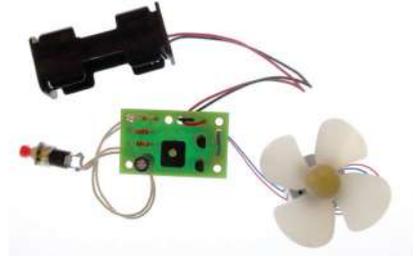
This kit uses a silent low current motor to spin a fan, making it perfect to circulate air through an air freshener containing potpourri or it can be used to move a light weight buggy. The electronics take no power in standby and when the switch is pressed the motor spins for up to 100 seconds. This time is adjustable via the on-board variable resistor.



Requires 2x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2123 | £3.90 | £2.95 | £2.70 | £2.57 | £2.43 |

\* Price shown includes bulk buy discount



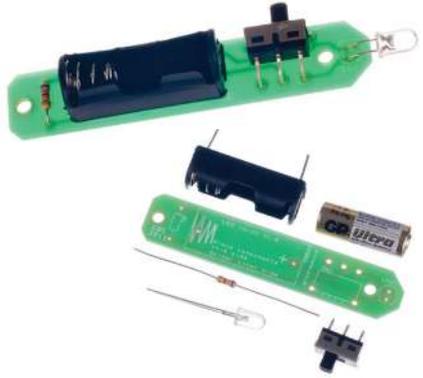
### PROJECT EXAMPLES - AIR FRESHENER



## WHITE LED TORCH PROJECT KIT



The LED torch uses a 5000 mCd ultra bright white LED. Power is supplied by an N size 12 Volt battery, which is included in the kit. The torch comes complete with a slide on / off switch.



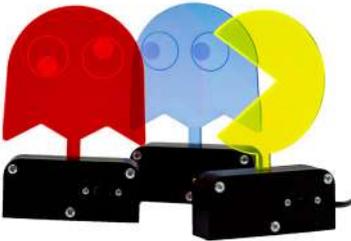
 Includes battery.

 With just four parts the kit makes a great introduction to electronics.

| Description                                | Code | 1+    | 5+    | 10+   | 50+   | 200+* | 300+* |
|--|------|-------|-------|-------|-------|-------|-------|
| White LED torch project kit (inc. battery) | 2114 | £2.60 | £1.95 |       | £1.65 | £1.57 | £1.49 |
| 12V battery (in addition to that included) | 2245 | £0.45 |       | £0.40 |       |       |       |

\* Price shown includes bulk buy discount

## 'LIGHT UP' DECORATION PACK - 10 PACK



↖ Light up decoration examples.

The decoration is made by layering laser cut Perspex® sheet. The centre piece uses clear Perspex® illuminated by a colour changing LED. As the LED changes colour this can be seen in the edges of the plastic or in 'etched / engraved' sections. The design has been created so that the shape of the decoration can easily be altered by the student. Making it ideal for seasonal tasks such as Christmas, Easter, etc.

The pack contains all the parts required to build ten of the kits (excluding Perspex®). You will need a solid colour for the base and a sheet of clear for the part of the decoration that is 'lit up'. See **page 200**.

 For an application note and laser cutting templates see: [www.kitronik.co.uk/lightup](http://www.kitronik.co.uk/lightup)

| Description                        | Code | 1+     | 5+     |
|------------------------------------|------|--------|--------|
| Light up decoration pack - 10 pack | 2133 | £16.50 | £15.50 |

## SQUEEZY TORCH KIT



The squeeze torch kit is an incredibly simple kit. It requires **no soldering** and can be built by people who have no electronics experience at all.

Once built, the torch is turned on by squeezing/ squashing the torch. This compresses the foam core which causes the legs of the LED to touch the battery, turning it on. The kit includes:

- 1 x High brightness white LED
- 1 x Neoprene foam core
- 1 x 3V coin cell
- 2 x White PVC outer covers



Includes coin cell.



Requires double sided tape (available separately).

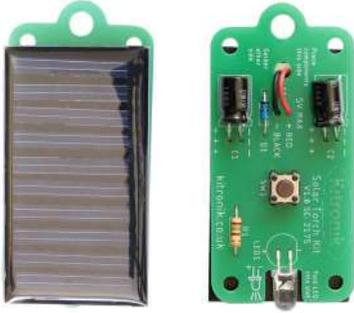


| Description                              | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|--|------|-------|-------|-------|-------|-------|
| Squeeze torch kit                        | 2148 | £1.95 | £1.45 | £1.25 | £1.19 | £1.13 |
| Double sided tape (50mm wide) - 33m roll | 2673 | £4.00 |       |       |       |       |

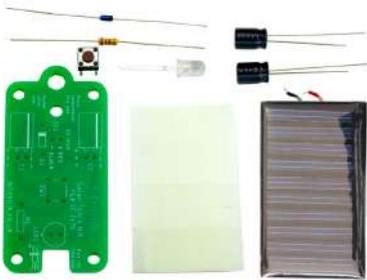
\* Price shown includes bulk buy discount

## PROJECT EXAMPLES - TORCH & LIGHT UP DECORATION





✓ Kit of parts.



Example of the solar torch kit in use. >



[www.kitronik.co.uk/2175](http://www.kitronik.co.uk/2175)

## SOLAR TORCH KIT



KS  
3



The solar torch is a small compact torch that uses a solar cell to charge capacitors which are then used to power the LED when the button is pressed. It is a great example of how to use solar power as a renewable energy source.

With its low part count the kit is easy to build and can be used as is, but it also offers a range of opportunities for designing a case.



Supplied as a kit of parts and requires soldering.



| Description     | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|-----------------|------|-------|-------|-------|-------|-------|
| Solar Torch Kit | 2175 | £4.95 | £3.95 | £3.55 | £3.37 | £3.20 |

\*Price shown includes bulk buy discount

## LOOKING FOR SOLAR CELLS?

Check out **page 153**.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## 5V MINI LED LAMP MODULE

This handy module provides a bright, compact light, which is easy to mount and use. It makes an excellent project with a minimum amount of soldering. The module can be powered from any 5V power source (such as those on page 19) soldered to the two power pads on the PCB. There is a hole for mounting the module in the centre of the PCB.

**i** Supplied fully assembled.

**Voltage range:** 3.6V – 5V.

**Current:** 56mA – 80mA.



| Description             | Code  | 1+    | 10+   | 50+   |
|-------------------------|-------|-------|-------|-------|
| 5V mini LED lamp module | 35137 | £1.65 | £1.26 | £1.07 |

A KITRONIK **FREE** RESOURCE

## BUILD A MINI LASER CUT LED LAMP WITH OUR ONLINE GUIDE



[www.kitronik.co.uk/minilamp](http://www.kitronik.co.uk/minilamp)



A KITRONIK **FREE** RESOURCE

## 3D PRINTED MATRIX LAMP PROJECT

A resource designed to show **how you can use our 5V LED lamp kit** as the basis for a 3D printing project.



[www.kitronik.co.uk/3dprintedlamp](http://www.kitronik.co.uk/3dprintedlamp)



## 5V LED MATRIX LAMP KIT

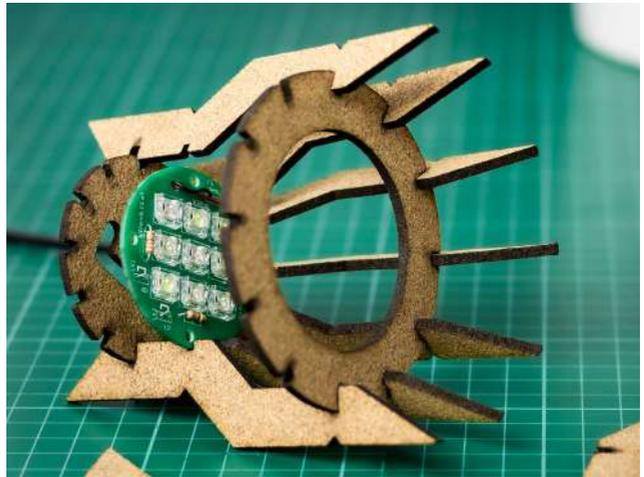
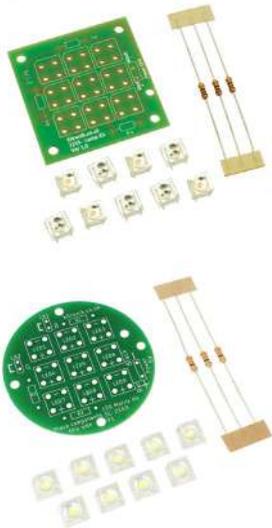


These 5V LED lamp modules offer really bright lights, which are compact and easy to mount. Each unit is supplied with nine white superflux LEDs, which output a lot of light. The units incorporate current limiting resistors, allowing it to be run from a 5V power supply or 3 x AA batteries. It will run continuously from batteries for around 5 hours.

These modules make a nice desk lamp when powered from an old mobile phone charger, using one of our micro USB breakout boards.



**i** Approximate current at 5V: 180mA



◀ Kits of parts.

⤴ Example of the round LED matrix lamp kit (2169) in use.

| Description                     | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|---------------------------------|------|-------|-------|-------|-------|-------|
| 5V LED Matrix Lamp Kit - Square | 2155 | £3.05 | £1.95 | £1.60 | £1.52 | £1.44 |
| 5V LED Matrix Lamp Kit - Round  | 2169 | £3.05 | £1.95 | £1.55 | £1.47 | £1.40 |

\* Price shown includes bulk buy discount

## 5V POWER SOURCES FOR OUR 5V LAMP PROJECTS

We make a number of projects which operate at around 5V. At this voltage you have a number of choices for powering the project. These are some of our favourites. You can find their full descriptions on our website, but with the option of being powered by either USB, battery or the mains, you are spoiled for choice. Our Mini LED Module and LED Matrix Lamps are extremely popular and pair with these products perfectly.

### USB POWER LEAD



[www.kitronik.co.uk/4101](http://www.kitronik.co.uk/4101)

| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 4101 | £0.65 | £0.55 | £0.50 |

### 3 x AA BATTERY CAGE WITH LEADS & SWITCH



[www.kitronik.co.uk/2239](http://www.kitronik.co.uk/2239)

| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 2239 | £0.70 | £0.60 | £0.50 |

### MICRO USB TO 5V BREAKOUT BOARD



[www.kitronik.co.uk/5109](http://www.kitronik.co.uk/5109)

| Code | 1+    | 10+   |
|------|-------|-------|
| 5109 | £0.95 | £0.75 |

### 5V 1A MICRO USB UK MAINS WALL POWER SUPPLY



[www.kitronik.co.uk/2208](http://www.kitronik.co.uk/2208)

| Code | 1+    | 10+   |
|------|-------|-------|
| 2208 | £4.49 | £4.25 |

## USB LED STRIP WITH POWER SWITCH

This LED Strip with power switch is a board designed for low power lighting, such as desk lamps or accent lights. Its discreet size and straightforward layout make it perfect for creative lighting enclosures.

The board has a micro USB power connector and has been designed so that it is within the supply rating of a computer USB port (under 100mA). This means you can power it conveniently from a computer/laptop or a suitable power supply. The board features the power switch at one end and the micro USB power connector at the other.



**i** Requires micro USB power supply or lead.

**i** Supplied fully assembled.

Operating voltage: 5V.

Current: 90mA.

[USB LED strip in use. >](#)

| Description                     | Code  | 1+    | 10+   | 50+   |
|---------------------------------|-------|-------|-------|-------|
| USB LED strip with power switch | 35150 | £1.95 | £1.75 | £1.55 |

A KITRONIK **FREE** RESOURCE

BUILD A SIMPLE

# STRIP BOARD EDGE-LIT PERSPEX SIGN

WITH OUR ONLINE GUIDE



[www.kitronik.co.uk/deersign](http://www.kitronik.co.uk/deersign)



## USB RGB LED STRIP WITH PATTERN SELECTOR

**NEW!**

The RGB LED Strip is a board designed for low power lighting applications, such as mood lamps, edge-lit signs, or accent lights. Its discreet size and straightforward layout make it perfect for custom creative lighting enclosures.

The board has a micro USB power connector and has been designed so that power requirements are within the supply rating of a computer USB port (under 100mA). This means you can power it conveniently from a computer/ laptop or a suitable power supply.



^ Example use.

The pre-programmed patterns are as follows:

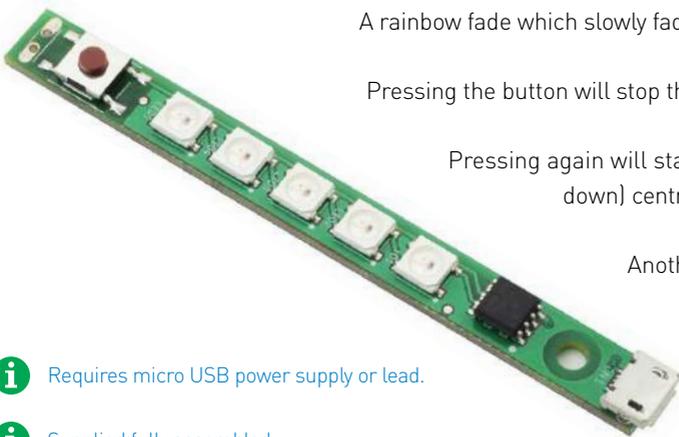
A rainbow fade which slowly fades through different colours.

Pressing the button will stop the fade on the current colour.

Pressing again will start a brightness fade (up and down) centred around the current colour.

Another press changes to an RGB chasing pattern.

A further press turns off the LEDs.



**i** Requires micro USB power supply or lead.

**i** Supplied fully assembled.

| Description                             | Code | 1+    | 10+   | 50+   |
|---|------|-------|-------|-------|
| USB RGB LED strip with pattern selector | 3561 | £3.40 | £3.00 | £2.70 |

## MICRO USB LAMP KIT V2.0



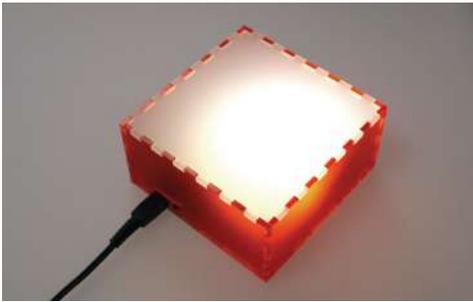
This kit allows you to build an economical mains powered lamp that takes power from a standard Micro USB phone charger (available separately). The kit comprises of a very bright 1W Power LED, which connects (with the provided cable) to a PCB that has a power switch, a Micro USB connector and a power resistor.



✓ Examples of the Micro USB Kit in use.



[www.kitronik.co.uk/2161](http://www.kitronik.co.uk/2161)



| Description             | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|-------------------------|------|-------|-------|-------|-------|-------|
| Micro USB Lamp Kit V2.0 | 2161 | £3.85 | £2.89 | £2.65 | £2.52 | £2.39 |

\* Price shown includes bulk buy discount

## PROJECT EXAMPLES - 3D PRINTED LAMPS



[www.kitronik.co.uk/3dprints](http://www.kitronik.co.uk/3dprints)



## USB POWERED LAMP KIT



Build a computer desk lamp or ornament using this simple board. This kit is available in either a white or a colour changing version. The board takes power from a USB port and the light can be turned on / off with the on board switch.

The kit contains:

- 1 x USB power cable, 1m (see below).
- 1 x Right angle power switch.
- 1 x LED.
- 1 x Resistor / zero ohm link.
- 1 x USB lamp PCB.



| Description                  | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------------------------------|------|-------|-------|-------|-------|-------|
| Colour changing USB lamp kit | 2131 | £2.55 | £1.90 | £1.65 | £1.57 | £1.49 |
| White USB lamp kit           | 2132 | £2.50 | £1.75 | £1.45 | £1.38 | £1.31 |

\* Price shown includes bulk buy discount

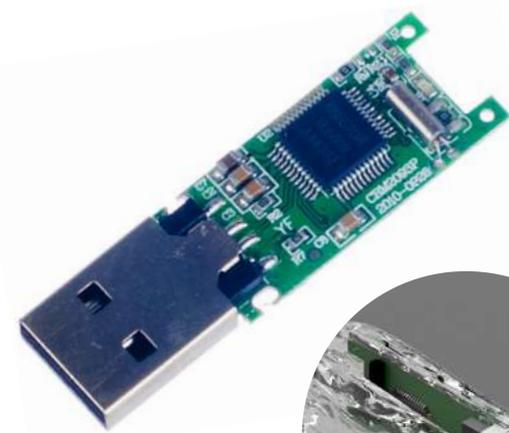
## PROJECT EXAMPLES - USB LAMP



Examples created by Year 10 students at Nottingham Emmanuel School.

To see more example pictures see our gallery at [www.kitronik.co.uk/gallery](http://www.kitronik.co.uk/gallery)

## 16GB USB MEMORY STICK, UNCASSED



This is a 16GB USB 2.0 Flash Drive/Memory Stick, uncased. As it is sold without the case, this 16GB memory stick is ideal for school projects in which students can design their own, or for hobbyists looking to add their own unique touch to an everyday piece of hardware.

To find our exciting laser-cut sweet USB Stick case design, please visit: [www.kitronik.co.uk/sweet-USBs](http://www.kitronik.co.uk/sweet-USBs)

[www.kitronik.co.uk/4115](http://www.kitronik.co.uk/4115)

| Description                    | Code | 1+    |
|--------------------------------|------|-------|
| 16GB USB Memory Stick, Uncased | 4115 | £3.95 |

### FREE RESOURCE

## 3D PRINTED MEMORY STICKS

A resource designed to show how you can use our uncased memory stick modules as the basis for a 3D printing project.



[www.kitronik.co.uk/memorystick](http://www.kitronik.co.uk/memorystick)

## USB FAN KIT



This kit allows you to build an economical desk fan that takes power from a standard USB port or USB power supply (available separately, see [page 154](#)).

The kit comprises a (90mm) fan blade and motor which connect to a PCB that has a power switch, resettable fuse and resistor. The low part count means the kit is very easy to build and is a great project for people with little soldering experience. The resettable fuse prevents the circuit from drawing too much power if the motor is stalled.

Supplied as a kit of parts and requires soldering.



✓ Kit of parts.



| Description | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|-------------|------|-------|-------|-------|-------|-------|
| USB Fan Kit | 2162 | £4.50 | £3.50 | £3.10 | £2.95 | £2.79 |

\* Price shown includes bulk buy discount

## PROJECT EXAMPLES - USB FAN KIT



See more pictures and find 3D printing resources at [www.kitronik.co.uk/2162](http://www.kitronik.co.uk/2162)

## LED PICTURE FRAME KIT



This kit allows you to illuminate the edge of a picture frame using a number of LEDs. This happens for a period of time when the button is pressed. The duration is set using a trimmer potentiometer and can be anything from a few seconds to 30 minutes. The student can choose which LEDs they would like to use. These are connected to the terminal block (along with a current limit resistor). The board can drive 200mA, which is about 10 high brightness LEDs.



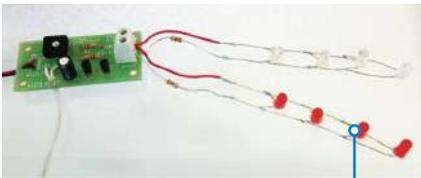
Requires 3x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2146 | £3.05 | £2.45 | £2.25 | £2.14 | £2.03 |

\* Price shown includes bulk buy discount

### HOW TO SELECT AND CONNECT LEDs TO THE KIT

The PCB has a terminal block to which the LEDs are connected. The LEDs are likely to require a current limit resistor. In theory every LED should have its own current limit resistor; however, in practice if the same type of LEDs are being used it is possible to share one current limit resistor between a number of LEDs. When doing this, the resistor value will be smaller than the resistor that is used with a single LED.



Flat edge of LED connected to (-)

This example is connected to make it easy to see how to do the connections; in reality longer wires would be needed.

The value of the resistor depends on the type and number of LEDs used. Whilst you can calculate this we have an online calculator that works out the values for you. Alternatively this table gives the resistor required for various LEDs when using four in parallel.

If a red LED and a white LED are going to be positioned in each corner of a picture frame, then the four red LEDs would be connected in parallel and the four white LEDs in parallel. Each colour LED then shares a current limit resistor. The picture (left) shows these connections.

#### Current limit resistor for four LEDs

**3504** Standard red 33Ω

**3505** Standard green 33Ω

**3506** Standard yellow 33Ω

**3542** Standard white 22Ω

**3543** Standard blue 22Ω

**3507** Ultra bright red 33Ω

**3524** Ultra bright white 22Ω

**3537** Ultra bright blue 22Ω

## EASY BUILD TIMER PROJECT KIT



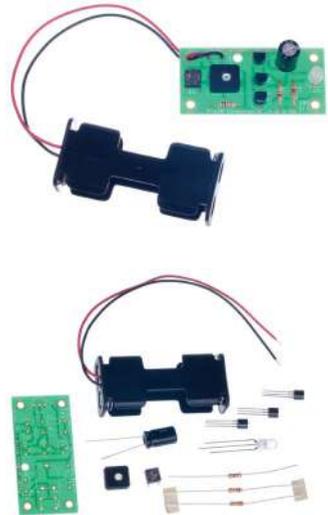
With its low part count this easy build timer project makes a good introduction to electronics. The timer uses a resistor capacitor network to provide a time delay of up to 3 minutes, which is set by the PCB mount variable resistor. When the button is pressed the LED changes from red to green, then at the end of the time interval it turns red.



Requires 2x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2111 | £2.30 | £1.75 | £1.50 | £1.43 | £1.35 |

\* Price shown includes bulk buy discount



## PROJECT EXAMPLES - EASY BUILD TIMERS



^ Examples of timers built by Year 7 students at Meole Brace School.

## NO SOLDER STEADY HAND GAME PROJECT KIT



This easy build steady hand game kit requires no soldering. Terminal blocks are used to connect the battery pack, buzzer, game loop and wire, such that when the loop touches the wire the buzzer sounds. The kit comprises of a reel of solid tinned copper wire and a reel of flexible heavy duty cable, with the remaining parts being individually bagged. It includes build instructions, but not a full set of teaching notes.



Requires 2x AA batteries, available separately.

| Description  | Code    | 1+     | 5+     | 9*     | 13*    |
|--|---------|--------|--------|--------|--------|
| No solder steady hand game project kit - box of 24 | 2107-24 | £46.50 | £44.50 | £42.28 | £40.05 |

\* Price shown includes bulk buy discount

### PROJECT EXAMPLES - STEADY HAND GAME



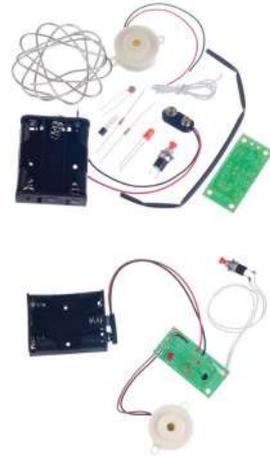
## STEADY HAND GAME PROJECT (WITH LATCH)



The board has a buzzer that sounds momentarily when the loop makes contact with the wire. It also has an LED, which latches on when the buzzer sounds via the use of a thyristor. It then remains on so that even the briefest contact of the loop with the wire can be indicated. A push button is used to reset the LED.

**i** The cables are supplied on reels with the remaining parts being individually bagged.

Requires 3x AA batteries, available separately.



| Description                                      | Code    | 1+     | 5+     | 9+*    | 13+*   |
|--|---------|--------|--------|--------|--------|
| Steady hand project kit (with latch) - box of 24 | 2108-24 | £80.00 | £73.00 | £69.35 | £65.70 |

\* Price shown includes bulk buy discount

## WIRELESS STEADY HAND GAME



With this steady hand game the connection from the loop to the board is made by the body of the person using the game, hence why it is called a wireless steady hand game. If the loop touches the wire track then a buzzer sounds for about a second (no matter how brief the touch). The circuit uses a hex buffer IC to detect the change in resistance when contact is made and the same buffer IC, with an RC network, keeps the buzzer on for the given time.

**i** The solid cable is supplied on a reel with the remaining parts being individually bagged.

Requires a PP3 battery, available separately.



| Description                           | Code    | 1+     | 5+     | 9+*    | 13+*   |
|---------------------------------------|---------|--------|--------|--------|--------|
| Wireless steady hand game - box of 24 | 2140-24 | £72.00 | £65.00 | £61.75 | £58.50 |

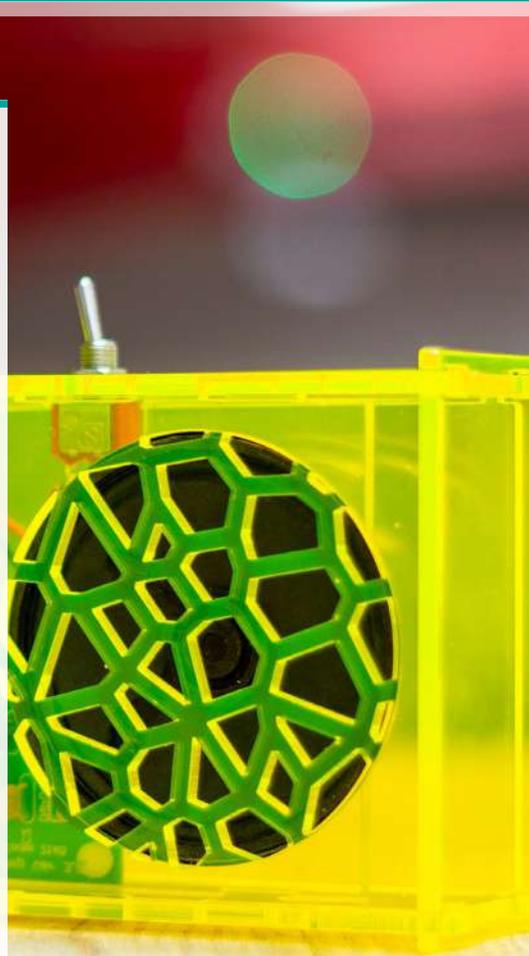
\* Price shown includes bulk buy discount

# 02

# INTERMEDIATE PROJECT KITS

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## MONO AMPLIFIER KIT



This is the improved version of our popular amplifier kit which can be used with any personal stereo equipment, including phones with a headphone socket. The kit is connected using a 3.5mm jack lead. It uses a modern 1W audio amplifier IC to produce high quality audio while being powered using just two low cost AA batteries. It also benefits from improved battery life when compared to our older version powered from a PP3 battery. The kit can run from any voltage from 2.2V to 5.5V.



Requires 2 x AA batteries.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2165 | £3.40 | £2.45 | £2.20 | £2.09 | £1.98 |

\* Price shown includes bulk buy discount



Boxing your amplifier is easy with our Mono Amp Case (see [page 34](#)).

✓ Mono Amplifier Example



## MONO AMP PRE-BUILT

The pre-built version of the amplifier kit allows you to focus more on product design. The mono amplifier kit (described above) is supplied with all the resistors, capacitors & IC fitted. Students just need to finish it by connecting the jack lead, speaker & battery holder to the board.



| Code  | 1+    | 5+    | 50+   | 200+* | 300+* |
|-------|-------|-------|-------|-------|-------|
| 2165B | £3.65 | £2.70 | £2.45 | £2.33 | £2.21 |

\* Price shown includes bulk buy discount

## MONO AMPLIFIER KIT WITH POWER SWITCH & STATUS LED



The Mono Amplifier Kit with power switch and status LED adds some new features to our already best-selling mono amp kit. This version of the mono amp also features an on-board on/off switch and also a handy status LED that can lead to longer battery life without the need to remove batteries from the cage when not in use. It uses an NCP2890 audio amplifier IC which can output 1.0W of power. The kit is supplied with a pre-built jack cable, an 8ohm 66mm speaker, an AA battery pack, and can run off any voltage from 2.5V to 5.5V.



[Kit of Parts >](#)



[www.kitronik.co.uk/2173](http://www.kitronik.co.uk/2173)



Requires 2 x AA batteries.

| Description                                       | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|---|------|-------|-------|-------|-------|-------|
| Mono Amplifier Kit with Power Switch & Status LED | 2173 | £3.85 | £2.70 | £2.45 | £2.33 | £2.21 |

\* Price shown includes bulk buy discount

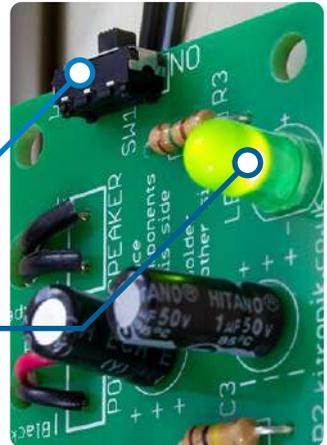
### WHY HAVE WE IMPROVED THE MONO AMP KIT?

#### ON/OFF SWITCH

Now, pulling all of the batteries from the kits at the end of the lesson is optional. The LED will let you know if it's still powered up and the on/off switch allows you to take swift action! As with the LED, you can connect the switch to the PCB with wire and mount the switch to an accessible part of an enclosure.

#### STATUS LED

You can now tell if the circuit is still powered up or not, even if hidden away inside an enclosure. Instead of soldering the LED straight to the board, you can separate the two with some wire and mount the LED to a visible part of the enclosure.



## PROJECT EXAMPLES - MONO AMPLIFIER



## LOOKING TO UPGRADE THE SOUND QUALITY OF YOUR AMPLIFIER?

There are a wide range of speakers that can be used with the amplifier kits on **page 165**.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## CARDBOARD MONO AMPLIFIER CASE



This simple yet stylish cardboard case for our Mono Amplifier Kit is perfect for those occasions where you are looking to deliver a quick, fun project, without the need for students to design and build a case to their own design.

These card cases enhance the amplifier's audio performance and can easily be modified or decorated, so that each student can produce a unique looking product. The outer face of the card is white, making it easy to decorate using felt tip pens, paint etc...

They are supplied as a flat net, which is then simply folded together to produce the final case. A set of instructions is available that explains how this is done in easy steps.



↗ Example amplifier case projects.



**i** Sold in boxes of 20 units. Amplifier kit not included.

**📏** W78 x D74 x H73mm (assembled).

| Description                               | Code  | 1+     | 5+     |
|---|-------|--------|--------|
| Cardboard Mono Amplifier Case – Box of 20 | 2154C | £12.00 | £10.50 |

## FREE LASER CUTTER FILES

Make a mono amp case with our free laser cutter files:



[www.kitronik.co.uk/ampcases](http://www.kitronik.co.uk/ampcases)



## FREE RESOURCE – 3D PRINTED AMPLIFIER / SPEAKER CASES

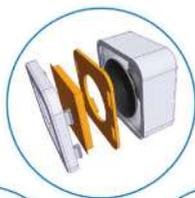
This resource has been designed to show how you can use our Mono and Stereo Amplifier kits as the basis for a 3D printing project. Speaker cases are a great size to still print relatively quickly, but also allow for more detailed exploration in the design and assembly of multiple parts.

The downloaded resources include:

- STL files for example cases.
- STL and Autodesk Inventor files for the amplifier kits, which are an ideal starting point for new designs.



[www.kitronik.co.uk/3dprintedamps](http://www.kitronik.co.uk/3dprintedamps)



## WHY USE A PROJECT FROM KITRONIK?



### DESIGNED FOR EDUCATION

Widely spaced components & pads, plus top grade PCBs.



### SUPPLIED WITH TEACHING MATERIAL

Includes in depth resources to reduce your planning time.



### INDIVIDUALLY PACKED

All you need to do is hand them out to students.



### TECH SUPPORT

We're here to help with any issues that you & your students might come up against.

## BLUETOOTH AMPLIFIER KIT



Our Bluetooth Amplifier Kit is the ideal starting point for a modern product design project. The kit has an integrated 3W Class-D amplifier which gives excellent audio performance. It also has an integrated LiPo battery charging circuit for people who also want a portable mains free solution. Due to the complexity of the product most parts are pre-mounted though some soldering is required.

### Key features:

- 3W audio amplifier with Bluetooth link (based on a fully CE compliant module).
- Play music from a phone, tablet and computer wirelessly.
- Simple user interface, via single on / off switch.
- Auto reconnect or enters pairing mode on power up.
- LED and sounds indicate status information such as 'pairing'.
- Optional connection point for additional off board LED.
- Can be powered from a 1A micro USB supply or LiPo battery **(both available separately)**.
- Includes automatic LiPo charging for battery capacities between 400mAh to 1000mAh.
- Speakers supplied unconnected allowing cable lengths and cable routing to be personalised to specific enclosure designs.



^ Example speaker case project.

**i** The kit is available either on its own with no speakers, or with two high quality 65mm or 100mm full range speakers. The 100mm speaker has improved 'bass' response compared to the 65mm speaker.

| Description                           | Code   | 1+     | 5+     | 50+    | 200+*  | 300+*  |
|---------------------------------------|--------|--------|--------|--------|--------|--------|
| Bluetooth Amp Kit – No Speakers       | 2160K  | £19.50 | £17.50 | £16.00 | £15.20 | £14.40 |
| Bluetooth Amp Kit – 4Ω 65mm Speakers  | 2160-A | £26.00 | £24.50 | £23.00 | £21.85 | £20.70 |
| Bluetooth Amp Kit – 8Ω 100mm Speakers | 2160-B | £30.50 | £28.00 | £25.50 | £24.23 | £22.95 |

\* Price shown includes bulk buy discount

| Bluetooth Amp Kit Accessories              | Page | Code | 1+    | 10+   | 100+  |
|--|------|------|-------|-------|-------|
| Polymer Lithium Ion Battery (3.7V, 1Ah)    | 152  | 4652 | £4.25 | £3.85 | £3.50 |
| Polymer Lithium Ion Battery (3.7V, 400mAh) | 152  | 2209 | £3.50 | £3.15 | £2.85 |
| 5V 1A Micro USB UK mains wall power supply | 154  | 2208 | £4.49 | £4.25 |       |

## STEREO AMPLIFIER KIT

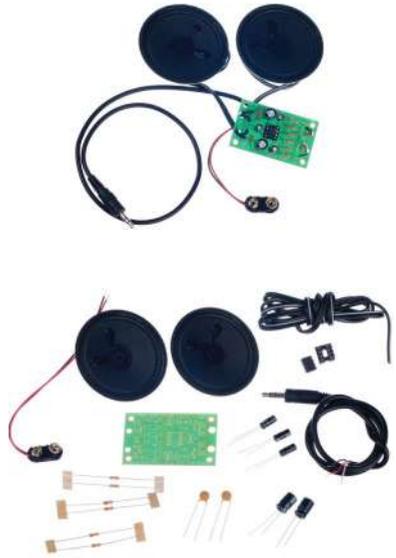


This amplifier kit can be used with any personal stereo equipment, including phones with a headphone socket. It uses a NJM2073D IC which can output 1W per channel. The kit is supplied with two speakers.

It has a PP3 battery clip and can run off any voltage from 2 to 15 volts.

It works nicely off a 9V battery (not supplied).

Supplied with a pre-made jack plug.



| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2136 | £5.25 | £4.10 | £3.85 | £3.66 | £3.47 |

\* Price shown includes bulk buy discount

✓ Stereo Amplifier Example



^ Deluxe Amplifier Example

## STEREO AMP PRE-BUILT

The pre-built version of the amplifier kit allows you to focus more on product design. The stereo amplifier kit (described above) is supplied with all the resistors, capacitors & IC holder fitted. Students just need to finish it by connecting the jack lead, speakers & power clip to the board.



| Code  | 1+    | 5+    | 50+   | 200+* | 300+* |
|-------|-------|-------|-------|-------|-------|
| 2136B | £6.75 | £6.60 | £6.05 | £5.75 | £5.45 |

\* Price shown includes bulk buy discount

## DELUXE STEREO AMPLIFIER



This amplifier kit can be used with any personal stereo equipment, including phones with a headphone socket. The kit is supplied with a 3.5mm jack lead allowing it to be connected to a wide choice of audio equipment. The kit has a volume control & a power LED. It can be powered by a battery connected to the PP3 clip, or a DC power module can be plugged in when the batteries automatically disconnect and the power supply is used. The kit can be powered off a 2V to 15V supply, though the volume is better with a higher supply.



It works nicely off a 9V battery (not supplied).



It uses a NJM2073D IC which can output 1W per channel. The kit is supplied with two speakers.

| Description                              | Code    | 1+    | 5+    | 50+   | 200+* | 300+* |
|--|---------|-------|-------|-------|-------|-------|
| 3.5mm jack - Deluxe stereo amplifier kit | 2141-JK | £6.90 | £5.50 | £5.10 | £4.85 | £4.59 |

\* Price shown includes bulk buy discount

## PRE-BUILT DELUXE AMPLIFIER

The deluxe amplifier is available with the parts on the board pre assembled. This is perfect for students studying product design where the focus is more on the enclosure rather than the electronics.

Students only need to connect the wires for the speakers, PP3 clip and the lead to connect the audio. The deluxe amp can be run off batteries or via the DC jack socket and comes with volume control, power LED and power switch.



| Description  | Code     | 1+    | 5+    | 50+   | 200+* | 300+* |
|--|----------|-------|-------|-------|-------|-------|
| Deluxe stereo amplifier 3.5mm jack version pre-built | 2141B-JK | £8.70 | £7.50 | £6.90 | £6.56 | £6.21 |

\* Price shown includes bulk buy discount

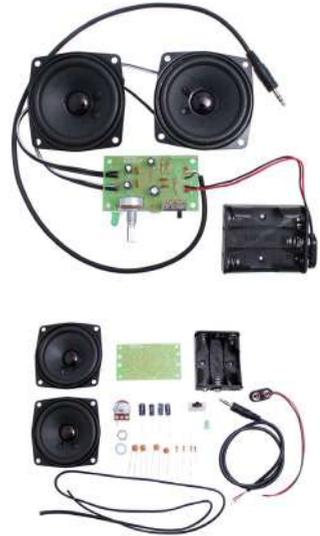
## 3W CLASS D STEREO AMPLIFIER



This 3W amplifier kit uses a modern 'Class D' stereo circuit design. This allows this kit to produce a loud and high quality sound from a power supply of 5.5V all the way down to 3.2V. This makes it ideal for portable battery powered applications which require high quality stereo output. This kit can be powered using a micro USB PSU for people looking for a mains powered solution.

**i** The kit is supplied with a 3.5mm jack lead and 2 full range speakers, which are 5W and 65mm in size with corner mountings. The kit features a volume control & power LED as well as an on / off switch that switches between battery power, off, and micro USB power.

Runs off 3x AA batteries or a mobile phone charger.



| Description                 | Code | 1+     | 5+     | 50+    | 200+*  | 300+*  |
|-----------------------------|------|--------|--------|--------|--------|--------|
| 3W class D stereo amplifier | 2158 | £15.00 | £14.25 | £13.50 | £12.83 | £12.15 |

\* Price shown includes bulk buy discount



< You can see the video (left) and view full information for this product at the following link:

[www.kitronik.co.uk/2158](http://www.kitronik.co.uk/2158)

## PROJECT EXAMPLES - HIGH POWER STEREO AMPLIFIER



## HIGH POWER STEREO AMPLIFIER



This amplifier kit can output up to 15W per channel into a pair of high quality speakers. The kit is capable of producing a very loud, high quality stereo sound. The kit includes all the parts required (plug in power supply, two speakers, PCB etc) to build your own amplifier for use with items such as MP3 players.

**i** The kit features a power LED, on / off switch and volume control.



| Description                 | Code    | 1+     | 5+     | 50+    | 200+*  | 300+*  |
|-----------------------------|---------|--------|--------|--------|--------|--------|
| High power stereo amplifier | 2143-JK | £32.50 | £30.50 | £29.50 | £28.03 | £26.55 |

\* Price shown includes bulk buy discount

## HIGH POWER AMP KIT (PCB & COMPONENTS)

Just the individual PCB and components to make the high power stereo amplifier described above. The product includes all the components required to build the PCB, but not a power supply, speakers or cable to connect it to audio equipment.

**i** Requires Soldering.



| Description                           | Code  | 1+     | 5+     | 50+   | 200+* | 300+* |
|---------------------------------------|-------|--------|--------|-------|-------|-------|
| High power amp kit (PCB & components) | 2143K | £12.00 | £10.50 | £9.50 | £9.03 | £8.55 |

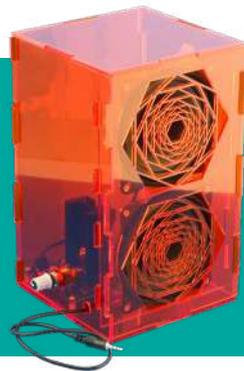
\* Price shown includes bulk buy discount

## FREE LASER CUTTER FILES

Make a high power amp case with our free laser cutter files:



[kitronik.co.uk/clearspeaker](http://kitronik.co.uk/clearspeaker)



## TIMED NIGHT LIGHT PROJECT KIT



The colour changing LED on this kit turns on when it goes dark and stays on for a period of time. This makes a good night light and because the LED is only on for a small amount of time the batteries last much longer.

There is an on board trimmer to set the light level at which the LED turns on and another trimmer to set how long the LED stays on for. The maximum duration is about 30 minutes. When set to 15 minutes and activated once a night the batteries will last two months.

 Requires 3x AA batteries, available separately.



| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2139 | £3.90 | £3.30 | £3.00 | £2.85 | £2.70 |

\* Price shown includes bulk buy discount

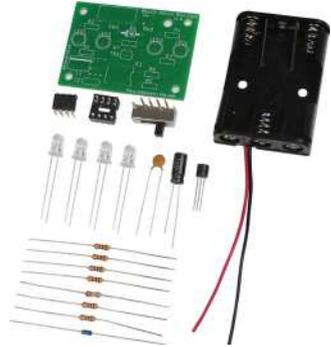
## PROJECT EXAMPLES - TIMED NIGHT LIGHTS



## DELUXE BIKE LIGHT KIT



This bike light kit is simple to build and is an excellent way to learn about the ever popular 555 timer IC. The kit uses four ultra bright LEDs, and can be operated in two modes: constant and flash. Both the flash rate and brightness conform to British Standards for vehicle road lighting (2005), making it ideal for use as a rear bike light. Alternatively, it can be used as a night safety product or flashing eyes. Using 4 x AAA batteries, this kit will run for over 72 hours.



Requires 4x AAA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2167 | £3.50 | £2.75 | £2.45 | £2.33 | £2.21 |

\* Price shown includes bulk buy discount

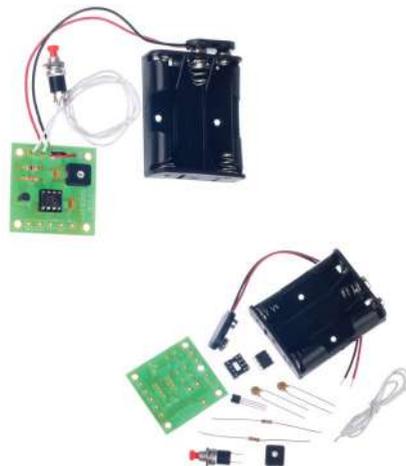
## 555 ASTABLE KIT (TONE GENERATOR)



This kit is perfect for GCSE students needing to use a 555 timer in its astable mode, where it produces a square wave output. The frequency of the square wave is adjustable via the variable resistor. The board has a choice of two outputs. The logic output can be used to drive another IC or a speaker can be connected so the tone is heard (e.g. a door bell). The push button switch connects to the reset line such that the IC is only active when the button is pressed.



Requires 3x AA batteries and depending upon desired use a speaker, both available separately.



| Description                            | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|--|------|-------|-------|-------|-------|-------|
| 555 timer astable (tone generator) kit | 2117 | £3.20 | £2.40 | £2.10 | £2.00 | £1.89 |
| 8Ω 50mm speaker - 10 pack              | 3302 | £5.50 |       |       |       |       |

\* Price shown includes bulk buy discount

## SOLAR GARDEN LIGHT KIT



The solar garden light is an interesting project that uses sustainable energy to illuminate a white LED. During the day the solar panel charges an AA battery, then when it goes dark the board automatically switches from charging the battery to illuminating the LED. The solar panel is resin encapsulated and therefore waterproof. Students will need to make a waterproof enclosure for the rest of the parts. Alternatively the sustainability theme can be extended to reusability as the board has been shaped so that it will fit into an old jar.

 This kit includes the rechargeable battery.



| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2134 | £6.80 | £5.40 | £4.80 | £4.56 | £4.32 |

\* Price shown includes bulk buy discount

### PROJECT EXAMPLES - SOLAR GARDEN LIGHT



 [kitronik.co.uk/solarjar](http://kitronik.co.uk/solarjar)

## SOLAR POWER STARTER KIT

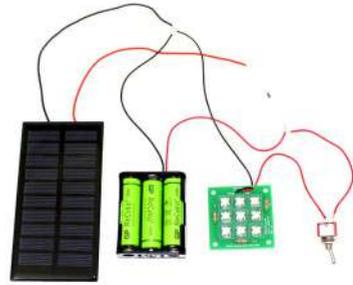



Learn how to harness the energy of the sun with our Solar Power Starter Kit. With this kit it is possible to build a simple solar charging and power supply system for a variety of useful low power devices.



^ Kit of parts.

 [www.kitronik.co.uk/2168](http://www.kitronik.co.uk/2168)



### Each pack contains:

- 1 x 5.0V 130mA Polycrystalline Solar Cell.
- 1 x BAT41 Signal Diode.
- 1 x SPST Toggle Switch.
- 1 x 5V LED Desk Lamp Kit.
- 1 x 3x AA Battery Holder with Flying Leads.
- 3 x Rechargeable AA Battery (1300mA/h).

 **The kit does not contain any connecting wire** - you will need to use wire like multi-stranded Wire.

 Requires assembly and some soldering.

| Description             | Code | 1+     |
|-------------------------|------|--------|
| Solar power starter kit | 2168 | £12.95 |

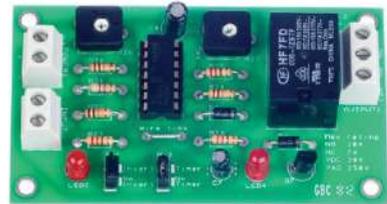
## RELAY BOARD KIT





This is a versatile board that can easily be configured via jumpers and trimmer potentiometers to do a range of tasks. Most sensors and switches can be connected to the input of the board and the trigger level set for the input device. This can be inverted if required, then there is the option to feed this straight to the relay or a timer of up to 25 minutes can be used. The board can run off any voltage from 4.5 to 6 volts.

 [www.kitronik.co.uk/2144](http://www.kitronik.co.uk/2144)



| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2144 | £6.00 | £4.70 | £4.40 | £4.18 | £3.96 |

\* Price shown includes bulk buy discount

## ALARM PROJECT KIT

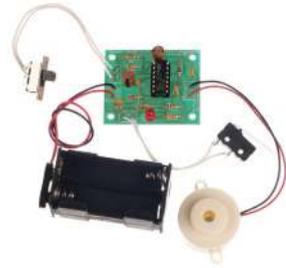


The kit can be used to make a shed or room alarm. It is armed / disarmed by a hidden switch. Alarms are detected by a micro switch mounted onto a door. A timer provides an entry delay during which the system can be disarmed, whilst a separate timer silences the alarm after two minutes.

Both of these timers are implemented via a 555 timer IC. The alarm can be further enhanced by using a simple key switch for arming / disarming, or by adding a magnetic door contact to activate it. The board, battery pack & buzzer can be placed into a box designed by the student.



Requires 4x AA batteries, available separately.



| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2101 | £5.35 | £4.35 | £4.00 | £3.80 | £3.60 |

\* Price shown includes bulk buy discount

## KEY SWITCH

This simple 1 switch is a great addition to the alarm project. The switch is an SPST switch activated by the key, which can be removed in both positions.



Supplied with two keys.



| Code | 1+    | 10+   |
|------|-------|-------|
| 2001 | £2.10 | £1.95 |

## DOOR CONTACT

The door contact consists of a reed switch and magnet, both housed in high impact enclosures. The switch is closed circuit when the magnet is present and open circuit otherwise.



60 x 14 x 14 mm (each)



| Code | 1+    | 10+   |
|------|-------|-------|
| 2055 | £2.00 | £1.60 |

## RECORD PLAYBACK KIT



This module allows a short (10 second) message to be recorded and played back at the push of a button. There is one button to play the message and another to re-record the message, which can be done over and over again.

The board includes a status LED that indicates recording is in progress or that playback has finished. Both the speaker and microphone are PCB mounted, so the only flying leads are for the battery holder which takes 2 AA batteries.

As the module shuts down when it is not in use, the batteries will last a very long time. An interface connector is available for more advanced users that wish to access the control signals.



Requires 2x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2149 | £6.00 | £4.60 | £4.25 | £4.04 | £3.83 |

\* Price shown includes bulk buy discount



## ★ BULK BUY DISCOUNTS

Where you see the star symbol (as above) the kit is eligible for additional bulk discounts, when you are buying 200 or more Kitronik project kits.

Different kits can be mixed to achieve the required quantity. The additional discount will be applied to appropriate price break for the quantity of each kit purchased.

ORDER  
200+ KITS  
5% OFF\*

ORDER  
300+ KITS  
10% OFF\*

\* the 50+ price

## TIMER PROJECT KIT



The timer project uses a dual 555 timer, which once started by pressing the button, illuminates an LED until the desired time out period has elapsed, and then a buzzer is sounded. The duration of both the delay and buzzer sound period can be determined by the student and are easily adjusted by PCB mounted potentiometers. This allows the board to be used for a variety of applications, such as an egg timer or a timer for a game. (Max time period 200 seconds, max buzzer period 10 seconds)



Requires 4x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2104 | £5.30 | £4.25 | £3.90 | £3.71 | £3.51 |

\* Price shown includes bulk buy discount

## BATTERY TESTER PROJECT KIT

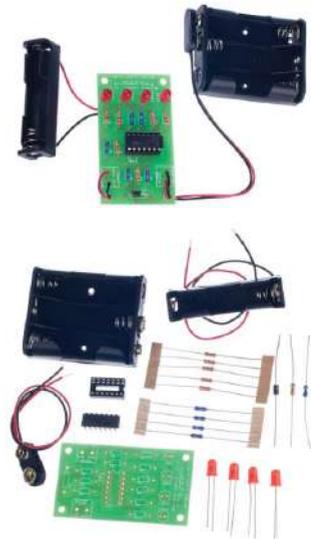


This kit has a single AA battery holder into which a battery can be placed; LEDs will then illuminate to show the remaining capacity of the battery. The circuit uses a quad operational amplifier to provide a reference voltage and comparators to determine which LEDs should go on. This makes it a great kit for studying operational amplifiers.

Testing of the kit can be performed by using an adjustable power supply, or with our circuit tester (consisting of an AA battery holder, variable resistor & crocodile clips).



Requires 3x AA batteries, available separately.



| Description                | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|----------------------------|------|-------|-------|-------|-------|-------|
| Battery tester project kit | 2102 | £3.35 | £2.65 | £2.35 | £2.23 | £2.12 |
| Circuit tester             | 2003 | £6.50 |       |       |       |       |

\* Price shown includes bulk buy discount

## DICE PROJECT KIT



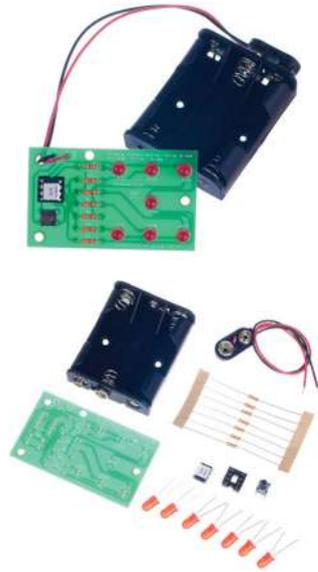
The kit has seven LEDs that are used to display a random dice number every time the 'start' button is pressed. A PIC micro-controller, pre-programmed with special software controls the dice.

The 'start' switch mounts directly onto the board allowing it to be used as built, or the dice can be housed into an enclosure designed by the student.

 Requires 3x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2109 | £4.35 | £3.30 | £3.10 | £2.95 | £2.79 |

\* Price shown includes bulk buy discount



## PROJECT EXAMPLES - DICE KIT



## THERMOMETER PROJECT KIT



The kit uses a thermistor to measure the temperature which is then displayed on an LED scale. A PIC micro-controller, pre-programmed with special software, is used to process the output of the thermistor and light the relevant LEDs.

The thermometer has two temperature ranges. One designed for indoor use and the other for outdoor use (selected by a wire link). The temperature is displayed every 10 seconds, or can be displayed on demand by adding either a normally open / normally closed push button switch.



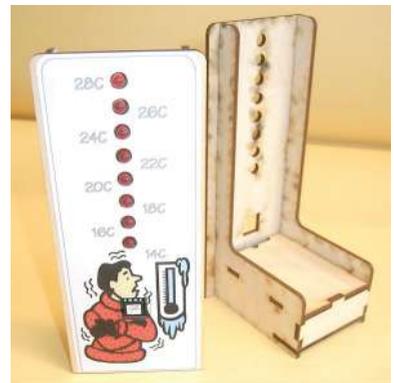
Requires 3x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2110 | £5.20 | £4.00 | £3.70 | £3.52 | £3.33 |

\* Price shown includes bulk buy discount



## PROJECT EXAMPLES - THERMOMETER



**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## GAME PROJECT KIT



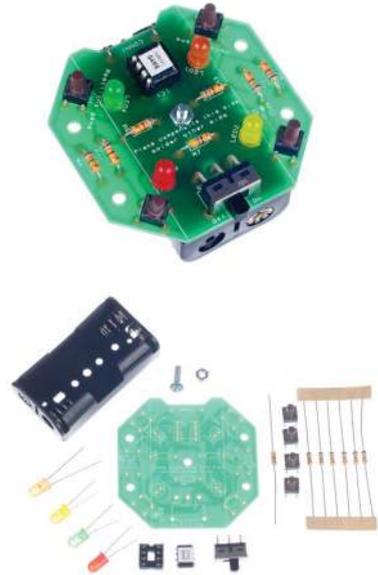
The kit has four buttons and LEDs to make up a game, both can be used as a memory game and a reactions game. A PIC micro-controller, pre-programmed with special software controls the game.

The on / off switch and battery pack mount directly onto the board, allowing it to be used as built or the game can be housed into an enclosure designed by the student.

 Requires 2x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2103 | £5.55 | £4.15 | £3.85 | £3.66 | £3.47 |

\* Price shown includes bulk buy discount



## XYLOPHONE PROJECT KIT



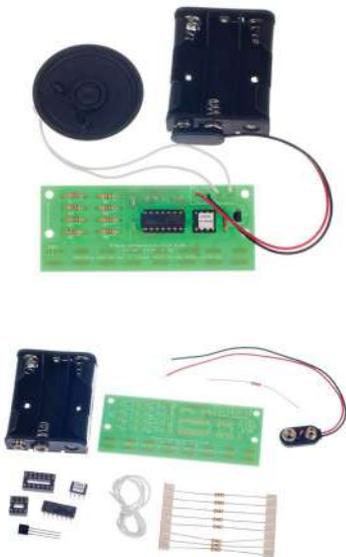
The xylophone has eight notes, which are sounded by placing a finger onto the PCB, allowing a simple tune to be played. The conversion of key presses into the frequency of the note is done by a PIC micro-controller, pre-programmed with software for this application.

The student can mount the PCB, battery pack and speaker into a box they have designed to make a children's toy.

 Requires 3x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2105 | £6.00 | £4.90 | £4.50 | £4.28 | £4.05 |

\* Price shown includes bulk buy discount



## 7 SEGMENT LED DISPLAY KIT



This kit uses a binary up down counter IC and a binary to 7 segment display driver IC to operate the 7 segment LED display. Connections to the board allow up or down counting to take place and a pre-set value to be loaded.

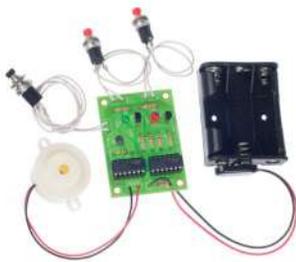
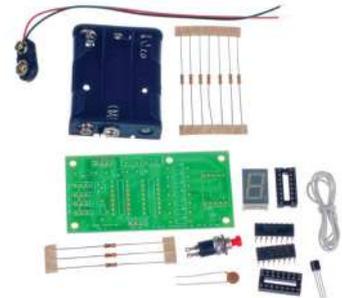
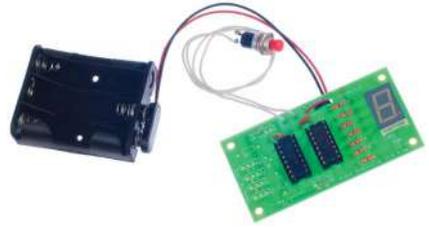
The kit makes a nice table football score board as supplied or an electronic dice if used in conjunction with the square wave generator (Application note available).



Requires 3x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2118 | £5.65 | £4.05 | £3.85 | £3.66 | £3.47 |

\* Price shown includes bulk buy discount



## QUIZ BUZZER PROJECT KIT



Two people (or two teams) can use the quiz buzzer to show who pressed their button first. When the button is pressed the buzzer sounds and either the red or green light is illuminated to show who was fastest.

This project is brilliant for demonstrating a wide range of electronics. It uses push to make & push to break switches, thyristors as latches, transistors, logic gates, LEDs & buzzers.



Requires 3x AA batteries, available separately.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2116 | £6.40 | £5.00 | £4.60 | £4.37 | £4.14 |

\* Price shown includes bulk buy discount

## FM RADIO KIT



The FM radio kit uses industrial surface mount ICs (the Si4820 and the NCP2890). The FM radio kit is supplied with the ICs mounted on the board. The students have to add the remaining resistors and capacitors to finish the kit. The radio has controls for tuning and to adjust the volume. The circuit includes an audio amplifier and output is via a 66mm diameter speaker that is supplied with the kit.



The board can be powered from a 2.5V to 5.5V supply and works nicely off a 5V wall supply or 3x AA batteries.

| Description  | Code | 1+     | 5+     | 50+   | 200+* | 300+* |
|--------------|------|--------|--------|-------|-------|-------|
| FM radio kit | 2157 | £12.00 | £10.50 | £9.50 | £9.03 | £8.55 |

\* Price shown includes bulk buy discount

## TELESCOPIC FM AERIAL ANTENNA

This Telescopic FM Aerial Antenna is designed to be compatible with our FM radio kit. It includes solder tag and bolt for simple connection and mounting. It is a great way of adding a more professional look and feel to your final design (as shown in the example image, below left).



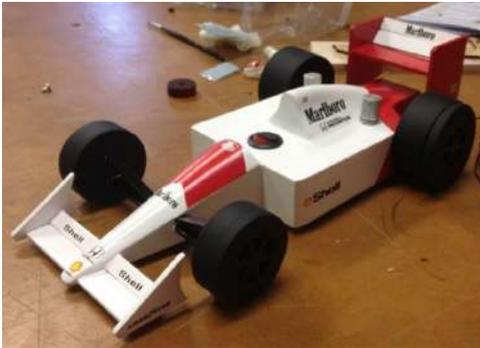
< Example use



Length: 11cm (minimum) to 49cm (maximum). [www.kitronik.co.uk/2006](http://www.kitronik.co.uk/2006)

| Description                  | Code | 1+    | 10+   | 25+   |
|------------------------------|------|-------|-------|-------|
| Telescopic FM Aerial Antenna | 2006 | £2.20 | £1.80 | £1.40 |

## PROJECT EXAMPLES - FM RADIO



DO YOU LIKE THIS  
3D PRINTED CASE  
(TO THE LEFT)?

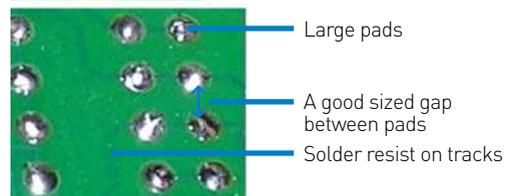
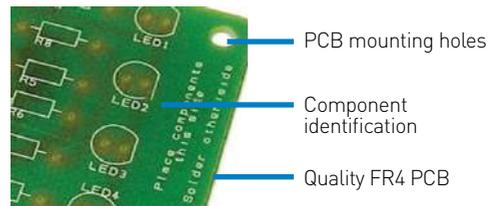
Get the 3D Printing files here:

 [www.kitronik.co.uk/3dprints](http://www.kitronik.co.uk/3dprints)

## PCBs

Our PCBs use an industry standard FR4 quality board, manufactured using a lead free finish. We try to make the PCBs easy to assemble by providing component identification and ensuring that the components are well spread out.

On the underside of the board, the pads are large for ease of soldering and again, where possible, well spaced from adjacent pads. A solder resist layer is present to ensure that the solder only goes on the pads, thus preventing unintentional solder shorts between tracks.



# 03

# BBC micro:bit & CODING PRODUCTS

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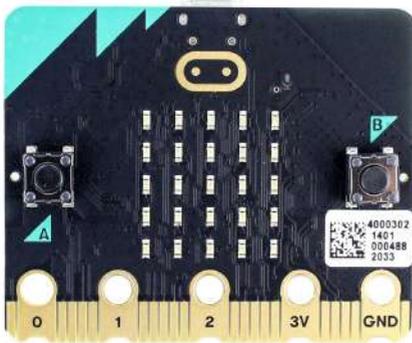
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## BBC micro:bit V2 (BOARD ONLY)

**NEW!**

This is a single new BBC micro:bit with **no accessories**, dispatched in low waste antistatic packaging.



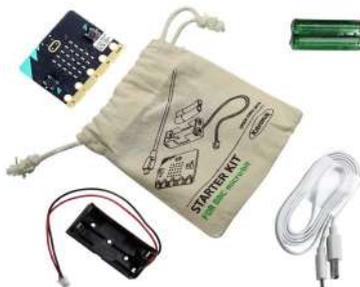
[www.kitronik.co.uk/56100](http://www.kitronik.co.uk/56100)

| Description                   | Code  | 1+     |
|-------------------------------|-------|--------|
| BBC micro:bit V2 (Board Only) | 56100 | £11.00 |

## BBC micro:bit V2 - STARTER KIT

**NEW!**

The Starter Pack consists of: BBC micro:bit, 1m USB cable, battery cage, 2 x AAA batteries, soft eco friendly fabric bag.



[www.kitronik.co.uk/56104](http://www.kitronik.co.uk/56104)

| Code  | 1+     |
|-------|--------|
| 56104 | £13.25 |

## BBC micro:bit V2 - 10 STUDENT CLASSROOM PACK

**NEW!**

The Classroom Pack consists of: 10 x BBC micro:bits, 10 x 1m anti-tangle USB cables, 10 x battery cages, 20 x AAA batteries.



[www.kitronik.co.uk/56105](http://www.kitronik.co.uk/56105)

| Code  | 1+      |
|-------|---------|
| 56105 | £128.50 |

## BBC micro:bit WITH KITRONIK INVENTOR'S KIT AND ACCESSORIES

This pack is the ultimate BBC micro:bit Starter Pack. It includes a BBC micro:bit, our world famous Inventor's Kit, 1m anti-tangle USB cable, battery cage, and 2 x AAA batteries.

More details on our Inventors Kit and add-on packs for the Inventors Kit can be found on [pages 62 & 63](#).



[www.kitronik.co.uk/5618](http://www.kitronik.co.uk/5618)

| Description  | Code | 1+     | 10+    | 100+   |
|--|------|--------|--------|--------|
| BBC micro:bit with Kitronik Inventor's Kit and Accessories | 5618 | £34.00 | £31.00 | £29.50 |

## E-TEXTILES KIT FOR THE BBC micro:bit

The E-Textiles kit for the BBC micro:bit offers a great way to get into creating BBC micro:bit controlled E-Textiles projects and designs. The kit comes with everything you need to create the Emoji Bag and Rocket Pencil Case projects, with enough extra LEDs and Crocodile clips to also create something of your own design.



### Kit contents:

- 5 x Sewable Red LED boards.
- 5 x Sewable White LED boards.
- 1 x 6m spool of Conductive Thread.
- 5 x White 5mm Diffused LEDs.
- 10 x Crocodile Clips.



[www.kitronik.co.uk/5607](http://www.kitronik.co.uk/5607)

Example project made with this kit. >

| Description                          | Code | 1+    | 10+   | 50+   |
|--------------------------------------|------|-------|-------|-------|
| E-Textiles kit for the BBC micro:bit | 5607 | £7.70 | £6.95 | £6.30 |

## MI:pro Protector Case for the BBC micro:bit

**NEW!**


The MI:pro protector case not only keeps a BBC micro:bit in perfect condition but also offers a number of other benefits. The 2 x AAA battery holder that we stock can be stuck to the back, making a compact and portable unit. It also can be stood neatly on a desk and provides large, easy to read labels for the A and B buttons. The 'edge connector' on the bottom of the BBC micro:bit remains accessible.


 Works with **V1 & V2** micro:bit

[www.kitronik.co.uk/56102](http://www.kitronik.co.uk/56102)


micro:bit not included

| Description  | Code    | 1+    | 10+   | 100+  |
|--|---------|-------|-------|-------|
| MI:pro protector case for the BBC micro:bit          | 56102   | £3.15 | £2.85 | £2.70 |
| MI:pro protector case for the BBC micro:bit (Blue)   | 56102-B | £3.15 | £2.85 | £2.70 |
| MI:pro protector case for the BBC micro:bit (Orange) | 56102-O | £3.15 | £2.85 | £2.70 |
| MI:pro protector case for the BBC micro:bit (Green)  | 56102-G | £3.15 | £2.85 | £2.70 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## MI:pro 'MOUNTABLE' CASE FOR THE BBC micro:bit

**NEW!**

This is the mountable version of the MI:pro Protector Case for the BBC micro:bit. This 'Mountable' case features two 'keyhole slot' style wall mounting points attached to the sides of the BBC micro:bit case.


 Works with  
micro:bit **V1 & V2**

[www.kitronik.co.uk/56103](http://www.kitronik.co.uk/56103)


micro:bit not included

| Description                                   | Code  | 1+    | 10+   | 100+  |
|---|-------|-------|-------|-------|
| MI:pro 'mountable' case for the BBC micro:bit | 56103 | £3.15 | £2.85 | £2.70 |

## 2 X AAA BATTERY BOX WITH SWITCH AND JST CONNECTOR

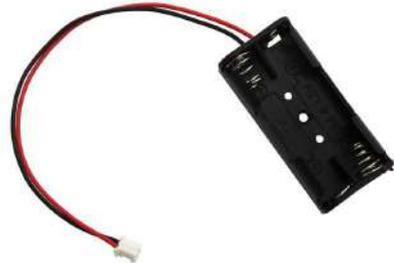
Add a versatile power solution to your micro:bit projects with this 2 x AAA battery holder featuring; a cover, a on/off switch and JST connector. Batteries sold separately.



| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 2225 | £0.95 | £0.85 | £0.75 |

## 2 X AAA BATTERY CAGE WITH JST CONNECTOR

This 2 x AAA Battery Cage with JST connector is the perfect way of powering the BBC micro:bit. Supplied with 145mm colour coded leads. Batteries sold separately.



| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 2271 | £0.90 | £0.75 | £0.65 |

## NOODLE CABLE

A 1M White Anti-Tangle (flat type) USB Type-A to Micro-B USB Noodle cable.

| Code | 1+    | 10+   |
|------|-------|-------|
| 4154 | £1.50 | £1.25 |



## MI:SOUND SPEAKER BOARD FOR THE BBC micro:bit V2

**NEW!**

The MI:sound board is a speaker board for the BBC micro:bit. It features on-board; speaker, CR2032 battery holder, thumbwheel volume control and an easy access on/off switch. The MI:sound board can either be powered by the CR2032 battery (provided) or via the micro:bit USB or JST connections. It has been designed to work with micro:bit V1 and micro:bit V2.



[www.kitronik.co.uk/5649-V2](http://www.kitronik.co.uk/5649-V2)

| Description                                     | Code    | 1+    | 10+   | 50+   |
|---|---------|-------|-------|-------|
| MI:sound Speaker Board for the BBC micro:bit V2 | 5649-V2 | £5.75 | £5.15 | £4.55 |

## MI:POWER BOARD FOR THE BBC micro:bit V2

**NEW!**

The MI:power board for the BBC micro:bit brings real portability to your wearable projects. The stylish, lightweight PCB is designed to fit snugly against the BBC micro:bit and features a built-in buzzer and 3V coin cell holder. This latest version has been redesigned to fit both the V1 and V2 micro:bit.



[www.kitronik.co.uk/5610-V2](http://www.kitronik.co.uk/5610-V2)

**i** CR2032 3V Coin Cell included

| Description                             | Code    | 1+    | 10+   | 50+   |
|---|---------|-------|-------|-------|
| MI:power Board for the BBC micro:bit V2 | 5610-V2 | £4.30 | £3.95 | £3.75 |

## PROJECT IDEAS FOR USING THE MI:power BOARD WITH THE BBC micro:bit


**WATCH MOUNT**

**PLANT SPIKE**

**LANYARD**

**BELT MOUNT**

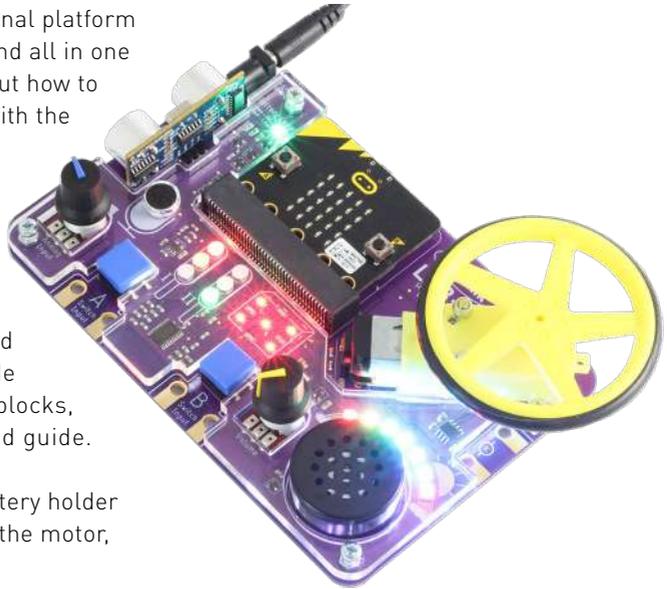
Read more & download the cutting files at:

[www.kitronik.co.uk/mipowerresources](http://www.kitronik.co.uk/mipowerresources)

## KITRONIK LAB:bit - DESKTOP CODING EXPERIMENTER

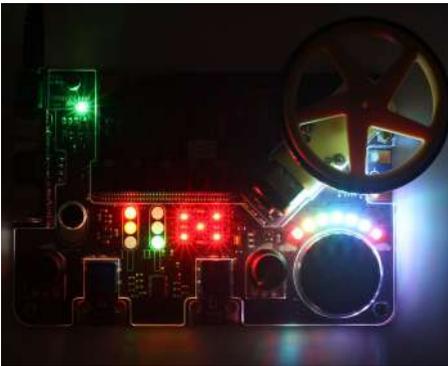
**NEW!**

The Kitronik LAB:bit educational platform for the BBC micro:bit offers an all in one environment for learning about how to process inputs and outputs with the micro:bit. Learn how to use sensor and user input and also how control external devices, such as motors, speakers, and LEDs. LAB:bit has been specifically designed for the computing classroom and is backed by online MakeCode tutorials, simplified custom blocks, and a detailed getting started guide.



Supplied in the box are; a battery holder (3 x AA), a wheel and tyre for the motor, and the detailed guide.

The board is absolutely packed with an impressive array of features and devices for easy delivery of fun and informative lessons. These include; a motor, ultrasonic distance sensor, 2 x large user assignable tactile buttons (with indicator LEDs), a microphone, speaker (with volume control), 7 fully addressable RGB LEDs (in an arc), A user assignable potentiometer control, 2 x sets of traffic light LEDs, and LEDs arranged in a dice formation (that can also be used for displaying digits).



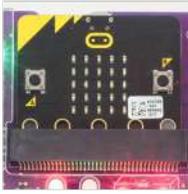
 [www.kitronik.co.uk/56101](http://www.kitronik.co.uk/56101)

 Batteries or PSU sold separately

| Description                            | Code  | 1+     | 10+    |
|--|-------|--------|--------|
| Kitronik LAB:bit for the BBC micro:bit | 56101 | £35.00 | £32.00 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the Kitronik LAB:bit.



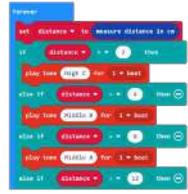
**Made for BBC micro:bit**  
From Beginner to Expert with Custom MakeCode blocks and example Python Code.



**Highly Interactive**  
With 4 onboard inputs and 5 onboard outputs, plus those added by the micro:bit itself.



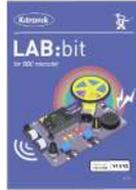
**Made for Beginners**  
Built to be an ideal introduction into coding, both in and out of the classroom!



**Simple Code**  
Microsoft MakeCode Editor is as easy as 1, 2, 3! Just click, drag and drop!



**No Tools Required**  
Simply push the tire and wheel into place, plug in your battery pack and go!



**Detailed Booklet**  
To help you get started as smoothly and quickly as possible!



**Seven Online Tutorials**  
Detailed online tutorials will take you through seven fun projects for your LAB:bit!



**Versatile**  
The project possibilities are endless! Reuse your LAB:bit over and over in the classroom!

## USB-B TO 2.1MM JACK CABLE, 5V, 2A

This is a simple cable that adapts from a USB port to a 5.5 x 2.1mm barrel connector, centre positive. This cable allows the user to use a USB port on a computer, laptop, or on our USB power supply to provide development boards with 5V. The cable is rated for a maximum of 2A.



| Code | 1+    |
|------|-------|
| 4179 | £2.00 |

## 2.1MM JACK UK WALL POWER SUPPLY, 5V, 2.5A

A high-quality 5V, 2.5A, 12.5W wall block power supply. This power supply is fitted with a standard fixed UK plug and is rated for UK use, a nominal 230V/50Hz supply. It provides a reliable, single regulated output voltage.



| Code | 1+    | 10+   |
|------|-------|-------|
| 2287 | £8.35 | £7.95 |

## KITRONIK INVENTOR'S KIT FOR THE BBC micro:bit

This kit is the perfect way of introducing students to programming, electronic control circuits and hardware interaction with the BBC micro:bit. It contains everything you need to complete 10 experiments (plus two bonus online experiments) including using LEDs, motors, light sensors and capacitors. The easy to follow tutorial book guides the user through everything they need to know about programming the BBC micro:bit. You will learn how to use a breadboard, the outputs of the BBC micro:bit, and a variety of electronic components, opening up a world of STEM learning. We also have some great add-on kits to continue your students learning journey.



< The Original Version of the Inventor's Kit

\* NEW!



Requires a micro:bit

| Description  | Code    | 1+       | 10+    |
|--|---------|----------|--------|
| Kitronik Inventors Kit for the BBC micro:bit (Python Version)*           | 5669    | £21.00   | £20.00 |
| Kitronik Inventors Kit for the BBC micro:bit (Python Version) - 20 Pack* | 5669-20 | £385.00* |        |
| Kitronik Inventor's Kit for the BBC micro:bit                            | 5603    | £21.00   | £20.00 |
| Kitronik Inventor's Kit for the BBC micro:bit - 20 pack                  | 5603-20 | £385.00* |        |

\* Just £19.25 per kit!

### OUR INVENTORS KIT RANGE:



Kitronik Inventors Kit  
for the BBC micro:bit



[kitronik.co.uk/5603](http://kitronik.co.uk/5603)

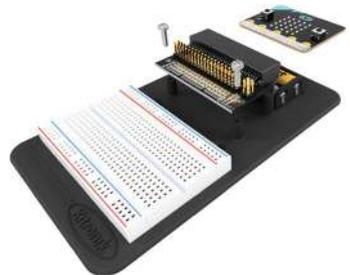


Kitronik Inventors Kit  
for micro:bit - Python Version



[kitronik.co.uk/5669](http://kitronik.co.uk/5669)

Our Inventors Kit comes in both the original MakeCode / Javascript version and a new MakeCode / Python version!



## ADD-ON PACKS FOR THE KITRONIK INVENTOR'S KIT

### NOISE ADD-ON PACK

The Noise Pack for the Kitronik Inventor's Kit allows budding inventors to further explore the world of sound using their BBC micro:bit. This pack includes components and instructions for students to build a further five experiments for exploring waveforms and amplifiers.

[www.kitronik.co.uk/5603-noise](http://www.kitronik.co.uk/5603-noise)



### ZIP LEDs ADD-ON PACK

This add-on pack for the Inventors Kit is a great way to learn about the world of ZIP LEDs. ZIP LEDs are addressable light emitting diodes, each LED contains three colour chips (red, green and blue) and a tiny microcontroller. Most consumer electronics rely on LEDs to provide instant visual feedback for the user. There are ten experiments, with nine in the booklet and another online.

[www.kitronik.co.uk/5603-zip](http://www.kitronik.co.uk/5603-zip)



### DIGITAL LOGIC ADD-ON PACK

Join the digital revolution and get up to speed with logic gates and truth tables. This pack includes components and instructions for students to build a further seven experiments for exploring basic digital logic.

[www.kitronik.co.uk/5653](http://www.kitronik.co.uk/5653)



| Description                                      | Code       | 1+     | 10+    | 50+    |
|--|------------|--------|--------|--------|
| Noise Add-On Pack for the Inventor's Kit         | 5603-NOISE | £11.50 | £10.50 | £9.50  |
| ZIP LEDs Add-On Pack for the Inventor's Kit      | 5603-ZIP   | £12.50 | £11.50 | £10.50 |
| Digital Logic Add-On Pack for the Inventor's Kit | 5653       | £8.75  | £8.10  | £7.75  |



**PLEASE NOTE:** These add-on packs require the Kitronik Inventor's Kit.

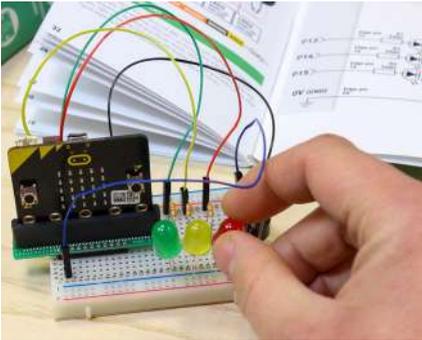
## KITRONIK DISCOVERY KIT FOR THE BBC micro:bit

This kit is a great way to get started with both programming and electronics. The kit contains five experiments that start very simply, building up to simulating real world systems as confidence grows.

The booklet included assumes no prior knowledge and contains detailed information about everything the new user will need to know. It covers everything from using a prototyping board to how to use the Microsoft MakeCode Editor, and everything in between. This kit is ideal for students and teachers who are new to the micro:bit, electronics, and coding.



The kit contains five experiments and all of the components required to complete them. Each experiment has: a complete code walk-through, a circuit diagram, a top-down breadboard view, full explanations of what is happening, and how the electronics work.



< Getting into coding with a breadboard.

This kit contains **29 parts** plus an **exclusive tutorial book!**



[www.kitronik.co.uk/5666](http://www.kitronik.co.uk/5666)

| Description                                  | Code | 1+     | 10+   | 50+   |
|--|------|--------|-------|-------|
| Kitronik Discovery Kit for the BBC micro:bit | 5666 | £10.00 | £9.00 | £8.00 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the Kitronik Discovery Kit.

## WHAT IS INCLUDED WITH THE DISCOVERY KIT?



### Made For micro:bit

No tools required, just slot in and you're ready to go.



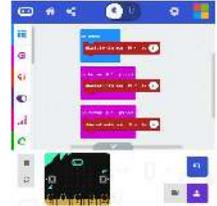
### Five Fun Experiments

Five experiments to take you from complete novice to simulating real-world systems.



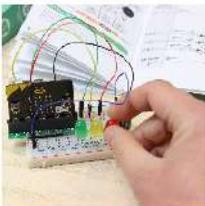
### Detailed Tutorial Book

Step-by-step code and build instructions with clear pictures help you to get going quickly.



### Simple Code

Microsoft MakeCode Editor is as easy as 1, 2, 3. Just click, drag and drop.



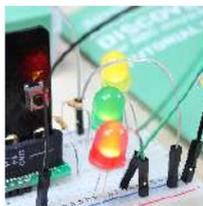
### Simple Build

No soldering here! Simply slot the components into the breadboard...and pull them right out again.



### Further Learning

Think you've got it all solved? Push yourself with extension challenges after every experiment.



### Build New Projects

Unleash your imagination and make your own circuits on the reusable prototyping system.



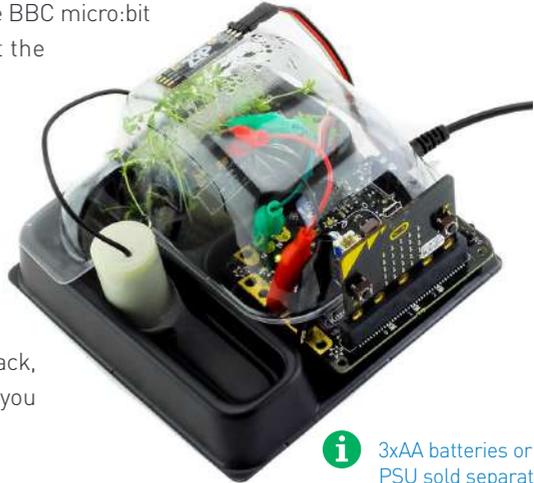
### Electronics Explained

Clear circuit diagrams and explanations make getting to grips with electronics easy.

## KITRONIK SMART GREENHOUSE KIT FOR THE BBC micro:bit

**NEW!**

The Kitronik Smart Greenhouse Kit for the BBC micro:bit provides an exciting way to learn about the relationship between plants and their environment. The kit comprises a two-part plastic greenhouse, Kitronik Environmental Control Board, water pump, Kitronik ZIP™ Stick, and Mini Prong soil moisture sensor. Also included are 5 crocodile clips, ZIP™ extension cable and a small screwdriver. Just add a micro:bit, a PSU with a barrel jack, seeds, water and growing medium, and you will have everything you need!

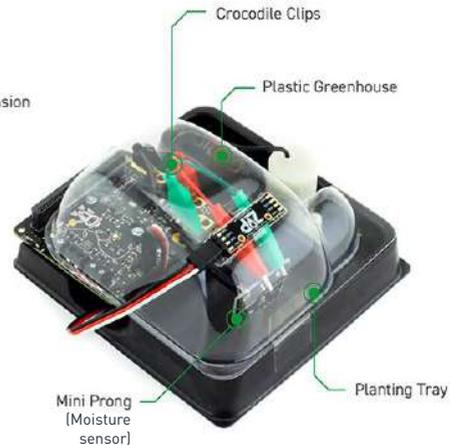


 [www.kitronik.co.uk/5699](http://www.kitronik.co.uk/5699)

 3xAA batteries or PSU sold separately

Find exciting tutorials for this kit at  [www.kitronik.co.uk/greenhouse-tutorials](http://www.kitronik.co.uk/greenhouse-tutorials)

| Description   | Code | 1+     | 10+    |
|---|------|--------|--------|
| Kitronik Smart Greenhouse Kit for the BBC micro:bit | 5699 | £35.00 | £32.00 |

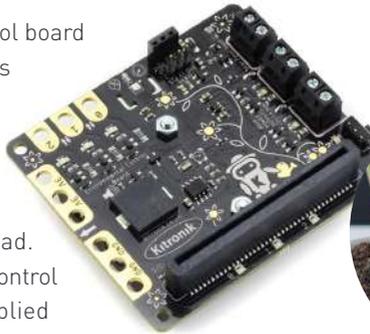


**PLEASE NOTE:** The BBC micro:bit is **not** included with the Smart Greenhouse Kit.

## KITRONIK ENVIRONMENTAL CONTROL BOARD FOR THE BBC micro:bit

**NEW!**

The Kitronik environmental control board provides a variety of sensor inputs and connection points for the BBC micro:bit (V1 & V2) and provides the ability to control outputs for devices such as a water pump, fan, servo or heater pad. This makes it ideal for feedback control systems. This board is also supplied as part of the Kitronik Smart Greenhouse Kit.



[www.kitronik.co.uk/5697](http://www.kitronik.co.uk/5697)

**i** 3xAA batteries PSU sold separately

| Description                          | Code | 1+     | 10+    | 50+    |
|--------------------------------------|------|--------|--------|--------|
| Kitronik Environmental Control Board | 5697 | £19.00 | £17.50 | £16.00 |

Find our Moisture Sensors, or "Prongs" - On Page 71

## SOLAR CELL KIT FOR THE KITRONIK ENVIRONMENTAL CONTROL BOARD

**NEW!**

This solar cell kit has been put together to provide a renewable power source for the Kitronik Environmental Control Board. Harness the energy of the sun to power long term projects without needing to plug in a power supply.



[www.kitronik.co.uk/56113](http://www.kitronik.co.uk/56113)

| Code  | 1+    | 10+   | 50+   |
|-------|-------|-------|-------|
| 56113 | £7.85 | £7.35 | £7.05 |

## 5V, 2.5A , 2.1MM JACK UK WALL POWER SUPPLY

A high-quality 5V, 2.5A, 12.5W wall block power supply. This power supply is fitted with a standard fixed UK plug and is rated for UK use, a nominal 230V/50Hz supply. It provides a reliable, single regulated output voltage and can be used to provide power for the Kitronik Smart Greenhouse Kit for the BBC micro:bit.



[www.kitronik.co.uk/2287](http://www.kitronik.co.uk/2287)

| Code | 1+    | 10+   |
|------|-------|-------|
| 2287 | £8.35 | £7.95 |

## LESSON IN A BOX® THE ENVIRONMENT PACK

NEW!



The Lesson in a Box The Environment provides a cross-curricular introduction to product design, data collection and data analysis using Smart Greenhouses. With content covering Design & Technology, Computing and Biology, pupils are encouraged to view traditional STEM activities as having value across their curriculum as they design greenhouses, interpret data on photosynthesis, and

explore the basics of machine learning.

The teaching resources - which include technician's notes, lesson plans, presentations, workbooks and more - are set out in a 'teacher-friendly' way, with sufficient detail to enable you to 'lift' them, photocopy them and run your lesson(s) with minimal fuss straight out of the box.



[www.kitronik.co.uk/5667](http://www.kitronik.co.uk/5667)

| Description                                    | Code  | 1+      | 5+      |
|--|-------|---------|---------|
| Kitronik Lesson in a Box® The Environment Pack | 56106 | £480.00 | £440.00 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the Environment Pack.



**Cross-Curricular**

Includes lessons for Design & Technology, Computing and Biology/Combined Science.



**Just Add micro:bits**

The box includes everything else you need to get started with lessons promptly.



**Designed by Teachers**

Kitronik worked alongside award winning teachers to ensure the lessons are both relevant & engaging.



**Curriculum Linked**

Each lesson has suggested specification links to national curriculums.



**Lesson Resources**

Schemes of work, Lesson Plans, Slideshows, Project Books, Worksheets, Build Posters & more.



**Digital Versions**

All of the lessons are provided on a USB drive in editable formats for you to print, photocopy & modify.



**Tried & Tested**

Tested in real classrooms by real pupils to ensure the lessons are suitable for all.



**School-Friendly**

Packaged into a reusable Gratnells Tray for a quick & tidy classroom.

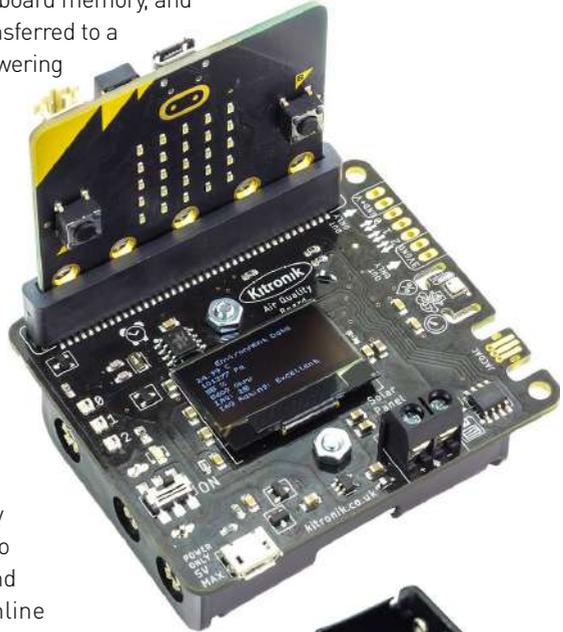


## KITRONIK AIR QUALITY & ENVIRONMENTAL BOARD

**NEW!**

The Kitronik Air Quality board provides a complete air monitoring and reporting solution for the BBC micro:bit. The wealth of onboard sensors allows you to collect extensive air quality and environmental data, such as Index of Air Quality, eCO<sub>2</sub>, temperature, pressure and humidity. This data can be permanently stored in onboard memory, and then displayed on the OLED screen or transferred to a computer for analysis. With options for powering via 3xAAA batteries (not included), a solar cell input and a micro-USB connector, the air quality board is well suited for both fixed position and more portable use cases.

The Air Quality Board is perfect for the classroom, providing the opportunity to run short or long-term cross-curricular projects and experiments. For example, monitoring air quality throughout the year and seeing the impact of the heating system. The data collected will already be in a format ready for importing to a spreadsheet program to carry out analysis and produce charts and graphs. Kitronik have also produced online MakeCode tutorials that are designed to introduce you to all of the key features of the board.


[www.kitronik.co.uk/5674](http://www.kitronik.co.uk/5674)

### Description

Kitronik Air Quality and Environmental Board

### Code

5674

### 1+

£30.00

### 10+

£28.00

### 50+

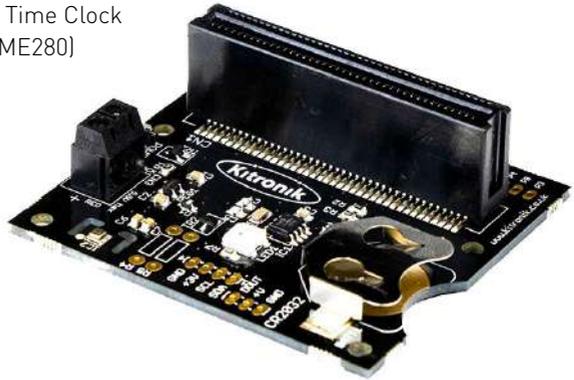
£26.00



**PLEASE NOTE:** The BBC micro:bit is **not** included with the Kitronik Air Quality & Environmental Board.

## KITRONIK KLIMATE ENVIRONMENT MONITORING BOARD FOR the BBC micro:bit

This RTC & Klimate board is a Real Time Clock (RTC) and environmental sensor (BME280) interface for the BBC microbit. The environmental sensor will give the ability to measure temperature, barometric pressure and humidity. The RTC will give the ability to read current time and date.



[www.kitronik.co.uk/5636](http://www.kitronik.co.uk/5636)

| Description  | Code | 1+     | 10+    | 50+    |
|--|------|--------|--------|--------|
| Klimate Environment Monitoring Board for the BBC micro:bit | 5636 | £16.65 | £15.00 | £13.50 |

## KITRONIK 'MINI' PRONG SOIL MOISTURE SENSOR FOR THE BBC micro:bit

**NEW!**

The Mini Prong soil moisture sensor for BBC microbit can be connected to a BBC micro:bit using clip wires to monitor the moisture present in the soil.



[www.kitronik.co.uk/56107](http://www.kitronik.co.uk/56107)

| Code  | 1+    | 10+   | 50+   |
|-------|-------|-------|-------|
| 56107 | £2.10 | £1.90 | £1.70 |

## KITRONIK PRONG SOIL MOISTURE SENSOR FOR BBC micro:bit

The Prong soil moisture sensor for BBC microbit is a sensor board that can be directly mounted to a BBC micro:bit to monitor the moisture present in the soil.



[www.kitronik.co.uk/5647](http://www.kitronik.co.uk/5647)

| Code | 1+    | 10+   | 50+   |
|------|-------|-------|-------|
| 5647 | £2.65 | £2.40 | £2.15 |

## KITRONIK :MOVE MOTOR FOR THE BBC micro:bit

The :MOVE Motor for the BBC micro:bit provides a fun introduction to buggy robotics. Learn about movement, how to utilise light and sound, obstacle detection and avoidance, and how to code :MOVE Motor to follow a line. When used in conjunction with the micro:bit's radio features, the possibilities are endless!

Attached to the chassis are two bi-directional DC motors with variable speed control. The wheels have rubber tyres and are a simple push-fit onto the motor shafts. Slot a BBC micro:bit into the edge connector and you are ready to code. There is no other assembly required and no tools required.

The buggy is supported by a range of learning resources that are available on our website.

 Requires 4 x AA batteries, available separately.



 micro:bit not included

 [www.kitronik.co.uk/5683](http://www.kitronik.co.uk/5683)

| Description   | Code | 1+      |
|---|------|---------|
| Kitronik :MOVE Motor for the BBC micro:bit              | 5683 | £25.50  |
| Kitronik :MOVE Motor for the BBC micro:bit – Pack of 20 | 5695 | £470.00 |



### Made For micro:bit

From Beginner to Expert with Custom MakeCode blocks and example Python code.



### ZIP LEDS

Light up your coding with 4 fully controllable RGB LEDs. Add indicators, headlights or Emergency Vehicle Lights



### Detailed Tutorials

Step-by-step tutorials to help make learning fun and easy



### Simple Code

Microsoft MakeCode Editor is as easy as 1, 2, 3. Just click, drag and drop.



### Sound the Horn

Use the Piezo Buzzer to beep the horn, or sound a siren



### Packed with sensors

Integrated Ultrasonic and Line Following sensors for out of the box autonomy



### Designed for Drawing

Add a pen to unleash your creative side



### Servo Connections

Expand your control by plugging in servos to dedicated headers

## KITRONIK :MOVE MOTOR KLAW KIT

**NEW!**

The :MOVE Motor Klaw provides a fun and easy to install addition to the Kitronik :MOVE Motor buggy for micro:bit. It has been carefully designed to have the ability to fit both vertically and horizontally with one bolt. Included are two types of Klaw attachments for each of these builds.

**Supplied as a set of parts that require simple assembly.**



:MOVE Motor not included

[www.kitronik.co.uk/5696](http://www.kitronik.co.uk/5696)

| Description                   | Code | 1+    | 10+   |
|-------------------------------|------|-------|-------|
| Kitronik :MOVE Motor Klaw Kit | 5696 | £7.35 | £6.65 |

## BLACK ELECTRICAL TAPE, 12MM X 20M

This black insulation tape is ideal for creating line following paths for the buggy. It is 12mm wide by 20m long.



[www.kitronik.co.uk/26118](http://www.kitronik.co.uk/26118)

| Code  | 1+    |
|-------|-------|
| 26118 | £1.60 |

## :MOVE MAT LINE FOLLOWING & ACTIVITY MAPS - A1 SIZE

This mat can be used for fun, or as part of a project in the classroom. It has a line following track on one side and a mock-up of a town on the other.



[www.kitronik.co.uk/46165](http://www.kitronik.co.uk/46165)

| Code  | 1+    | 10+   |
|-------|-------|-------|
| 46165 | £4.00 | £3.50 |

## :MOVE Mini MK2 BUGGY KIT FOR THE BBC micro:bit



The Kitronik :MOVE mini buggy kit MK2 for the BBC micro:bit provides a fun introduction to robotics. The :MOVE mini is a 2 wheeled robot, suitable for autonomous operation and also remote control projects by using a Bluetooth application or second BBC micro:bit as a controller. Once built, it can be coded for a variety of fun activities.

◀ The buggy, constructed.

▼ Kit of parts.



The Kitronik :MOVE mini is powered by two continuous rotation servo motors. The MK2 :MOVE mini comes with rubber tyres to improve traction. Coding is easy with microsoft MakeCode.

The buggy also has 5 x RGB addressable ZIP LEDs (NeoPixel compatible), which can be used as indicators, reverse lights etc... It is possible to add a pen or other extra parts to the kit to increase the range of tasks for which it can be used.

 BBC micro:bit sold separately and the kit requires simple assembly.

 [www.kitronik.co.uk/5652](http://www.kitronik.co.uk/5652)

| Description  | Code    | 1+       | 10+    |
|--|---------|----------|--------|
| :MOVE mini buggy kit MK2 for the BBC micro:bit           | 5652    | £23.95   | £21.95 |
| :MOVE mini buggy kit MK2 for the BBC micro:bit - 20 pack | 5652-20 | £425.00* |        |

\* Just £21.25 per kit!

## MK2 ADD-ON PACKS FOR THE :MOVE mini



Lift, carry and move stuff with the :MOVE mini MK2 ! These tipper, bumper and bulldozer add-on packs mean the :MOVE mini can now do even more.

**i** These products require :MOVE min (fits both MK1 and MK2) and micro:bit, both sold separately.

**e** [www.kitronik.co.uk/5671](http://www.kitronik.co.uk/5671)

**e** [www.kitronik.co.uk/5658](http://www.kitronik.co.uk/5658)

**e** [www.kitronik.co.uk/5670](http://www.kitronik.co.uk/5670)

| Description                                  |                              | Code | 1+     | 10+    | 50+   |
|--|------------------------------|------|--------|--------|-------|
| Bulldozer add-on for the :MOVE mini MK2      | <b>i</b> Soldering required. | 5671 | £7.50  | £6.75  | £6.15 |
| Bumper add-on for the :MOVE mini MK2         |                              | 5658 | £1.65  | £1.45  | £1.30 |
| Tipper trailer add-on for the :MOVE mini MK2 | <b>i</b> Soldering required. | 5670 | £11.50 | £10.50 | £9.50 |

## :MOVE mini TEACHER RESOURCES

We have been creating an ever increasing range of resources for the :MOVE mini kit. **Here is a selection of the latest additions:**

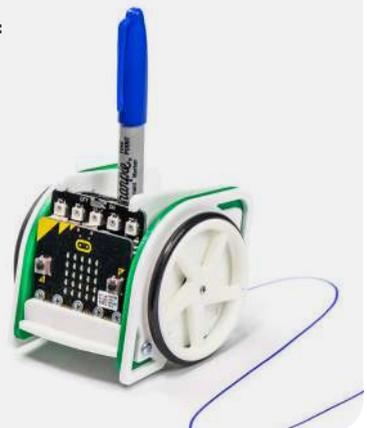
**GUIDE FOR CODING INDICATORS**

**ROBOTIC LESSON PLANS**

**DRAWING WITH THE :MOVE mini**

All of the resources can be found on the product page:

**e** [www.kitronik.co.uk/5652](http://www.kitronik.co.uk/5652)



## LINE FOLLOWING ADD-ON FOR :MOVE Mini MK2

Add line following functionality to the Kitronik :MOVE mini buggy for the micro:bit with this easy to assemble add-on kit. The add-on comes with all the parts required to add line following functionality to the :MOVE mini (MK1 and MK2) and does not require any soldering. Once built, the sensitivity of the left and right sensors can be individually tweaked to ensure smooth operation on the surface / floor you are using.

No soldering is required but the kit does require some mechanical assembly.

Example test code is available for download. By default the code will cause the buggy to follow a dark line on a light background but the code can be altered to do the opposite.

**i** This product requires :MOVE mini buggy (fits both MK1 and MK2) and micro:bit, both sold separately.

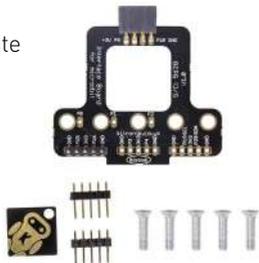
**e** [www.kitronik.co.uk/5659](http://www.kitronik.co.uk/5659)



| Description                              | Code | 1+     | 10+   | 50+   |
|--|------|--------|-------|-------|
| Line following add-on for :MOVE mini MK2 | 5659 | £11.00 | £9.50 | £8.50 |

## :MOVE SENSOR INTERFACE BOARD FOR THE BBC micro:bit

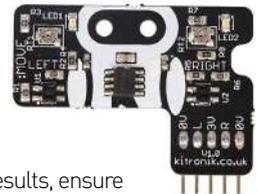
This board acts as a breakout board for the micro:bit while it is attached to a Servo:Lite board and allows you to add things such as line following boards, sensors, and much more.



| Code | 1+    | 10+   | 50+   |
|------|-------|-------|-------|
| 5628 | £5.70 | £5.40 | £4.90 |

## :MOVE LINE FOLLOWING BOARD

This board can be used to either follow a dark line on a light background or a light line on a dark background. For best results, ensure there is approx. 5mm clearance between the bottom of the board and the driving surface. The sensitivity of the line following can be adjusted via the two on-board pots, one for each detector.



| Code | 1+    | 10+   | 50+   |
|------|-------|-------|-------|
| 5629 | £5.85 | £5.00 | £4.75 |

## STOP:bit - TRAFFIC LIGHT FOR THE BBC micro:bit

Upgrade your pedestrian crossing project with the STOP:bit for BBC micro:bit. This is available either pre-assembled or as a solder-yourself kit, has 3 LEDs and be can be coded with the MakeCode Editor.

[www.kitronik.co.uk/5642](http://www.kitronik.co.uk/5642)

| Description          | Code  | 1+    | 10+   | 50+   |
|----------------------|-------|-------|-------|-------|
| STOP:bit - Assembled | 5642  | £3.50 | £3.15 | £2.85 |
| STOP:bit - Kit       | 5642K | £2.70 | £2.45 | £2.20 |



## LAMP:bit - STREET LIGHT FOR THE BBC micro:bit

The LAMP:bit is a bolt-on/clip-on board for the micro:bit that replicates a street light which features a built in phototransistor for autonomous switching.

[www.kitronik.co.uk/5643](http://www.kitronik.co.uk/5643)

| Description | Code | 1+    | 10+   | 50+   |
|-------------|------|-------|-------|-------|
| LAMP:bit    | 5643 | £4.40 | £3.95 | £3.60 |



## ACCESS:bit - BARRIER FOR THE BBC micro:bit

The ACCESS:bit is a bolt-on/clip-on board for the micro:bit that replicates an automated barrier which features a servo motor and buzzer for autonomous activation.

[www.kitronik.co.uk/5646](http://www.kitronik.co.uk/5646)

| Description | Code | 1+     | 10+   | 50+   |
|-------------|------|--------|-------|-------|
| ACCESS:bit  | 5646 | £10.00 | £9.00 | £8.25 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this page.

## SIMPLE ROBOTICS KIT FOR THE BBC micro:bit

Enter the world of robotics with our Simple Robotics kit and build your own easy build microbit controlled robot. It has been designed, from the ground up, to be simple to build by even the youngest of fingers. From its one piece cardboard chassis to its clip lead connections, everything goes together in a way that is as free from frustration as possible. The kit of parts is accompanied by a detailed set of instructions that will not only walk you through the assembly, but it also covers the coding in detail. Even if you aren't confident or technical in nature, you will have no difficulties assembling and using this wonderful kit.



 Requires 3 x AA batteries.

 [www.kitronik.co.uk/5665](http://www.kitronik.co.uk/5665)

| Description                       | Code | 1+     | 10+    |
|-----------------------------------|------|--------|--------|
| Simple Robotics Kit - single pack | 5665 | £25.50 | £23.50 |



### Clippable Electronics

Get to the action sooner with super quick croc clip connections.



### Simple Build

No superpowers needed to build this robot. Simply fold and drop in the electronics!



### Simple Code

Microsoft MakeCode Editor is as easy as 1,2,3. Code, load and hit the road!



### Detailed Tutorial Book

Your obstacle course awaits, use our fun tutorial book to get your robot coded & ready for action.



### Bonus Tutorials

Do even more with our free online tutorials like bump & spin!



### Customisable

Decorate, customise and modify your robot. Get even more creative and make a completely new robot body!



### Make Other Projects

Unleash your imagination, and build your own robotic projects out of cardboard!



### Add Ons

Lights, motors, action! Add headlights or add our :GAME Controller for some remote control fun!

## LESSON IN A BOX® SIMPLE ROBOTICS



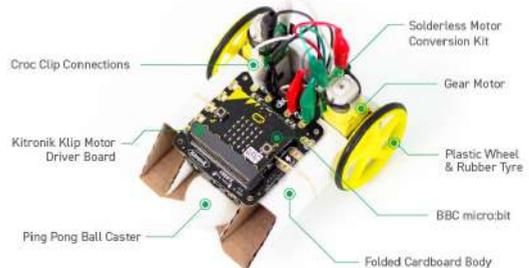
The Lesson in a Box (Simple Robotics) is a complete set of electronics and teaching resources to enable successful cross-curricular lessons with minimal teacher effort. The kit and teaching resources have been tried and tested by real pupils and developed by real teachers to save you time. We know how busy you are!



All of the teaching resources are set out in a teacher, 'user-friendly' way, including technicians notes, lesson plans, resources, workbooks or worksheets and much more!

**i** Features 10 student and 1 teacher sets supplied in a large reusable Gratnell's tray.

**e** [www.kitronik.co.uk/5657](http://www.kitronik.co.uk/5657)



| Description                               | Code | 1+      | 5+      |
|---|------|---------|---------|
| Kitronik Lesson in a Box® Simple Robotics | 5657 | £399.95 | £359.95 |

## SIMPLE ROBOTICS CARDBOARD CHASSIS - 25 PACK

As the Lesson in a Box Simple Robotics pack is designed to allow students to customise their robotics creations, we have created a refill pack of cardboard chassis so that each class can add their own flare to their project.

**e** [www.kitronik.co.uk/2063](http://www.kitronik.co.uk/2063)



| Description                                 | Code | 1+     |
|---|------|--------|
| Simple Robotics Cardboard Chassis - 25 pack | 2063 | £10.00 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this spread.

## HALO HD FOR THE BBC micro:bit

The Halo HD incorporates 60 individually addressable full colour ZIP LEDs, a microphone, a speaker, and a real time clock module. This means that the Halo HD can display a huge spectrum of colours, and make noises, which can be made to react to sound and time.

The micro:bit slots into the Halo HD and is powered via the 3 x AA battery cage on the back of the product. The P1 and P2 micro:bit pins are also broken out to 0.1" pads along with power and GND. This allows for additional connections to components such as servo motors.



The Halo V2 requires 3 x AA Batteries and a BBC micro:bit (not included).



[www.kitronik.co.uk/5672](http://www.kitronik.co.uk/5672)

| Description                   | Code | 1+     | 10+    | 50+    |
|-------------------------------|------|--------|--------|--------|
| Halo HD for the BBC micro:bit | 5672 | £21.50 | £19.65 | £17.85 |

60 Individually Addressable Full Colour ZIP LEDs

2x M3 Mounting Holes

Piezo Buzzer

Power Switch

Real Time Clock

Integrated Microphone

BBC micro:bit Edge Connector

micro:bit Breakout Pin 1

Pads for JST Connector (User Addition)

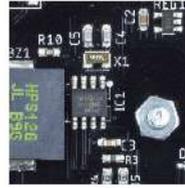
micro:bit Breakout Pin 2



**Made for BBC micro:bit**  
The ZIP Halo HD is controlled via BBC micro:bit. Simply dock into the edge connector.



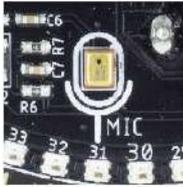
**60 ZIP LEDs**  
Featuring 60 individually addressable, full colour, ZIP LEDs.



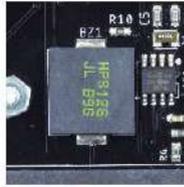
**Real Time Clock**  
Keep track of time with the onboard crystal.



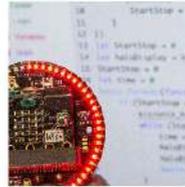
**Built-in Battery Cage**  
Integrated 3xAAA Battery holder for portable power.



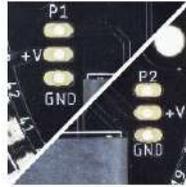
**Integrated Microphone**  
Code a clap controlled lamp or create a light show for your favourite music.



**Buzzer**  
Loud piezo sounder for audio feedback.



**Project Examples**  
Sunrise alarm clocks, sound meters & more.



**Expandable I/O**  
Add additional inputs and outputs for more advanced projects.

## ALARM CLOCK KIT WITH ZIP HALO HD FOR THE BBC micro:bit

This kit provides a fun introduction to features of the Halo HD. It contains a modified version of the Halo HD, all of the parts required to build the clock, and also power accessories. It also includes an easy to follow tutorial book which will guide you through building your clock & checking all the LEDs are working correctly with some test code.

Power is provided via a 2.1mm barrel jack connection and there is also a coin cell holder fitted to the rear of the board. When a coin cell battery is inserted, it will then provide power to the clock chip when no power is being supplied to Halo HD.

**i** The BBC micro:bit is **NOT** included with this kit.



[www.kitronik.co.uk/5681](http://www.kitronik.co.uk/5681)

**b** An optional power supply is available, but any 1A USB (Type A) unit will be suitable.

| Description                           | Code | 1+     | 10+    |
|---------------------------------------|------|--------|--------|
| Halo HD Alarm Clock Kit               | 5681 | £30.00 | £27.50 |
| Type A USB Power Supply - UK Mains 1A | 2261 | £5.20  | £5.00  |

## LESSON IN A BOX® VISUAL COMPUTING PACK

The Lesson in a Box Visual Computing pack for micro:bit is designed to provide a simple solution for teaching both computing and cross curricular lessons at KS3 / KS4. The lessons are designed around tasks that provide the student with some form of visual feedback. Examples include lighting within cultures, visualising data and seeing earthquakes.

The **teaching resources** included in this pack are set out in a 'teacher-friendly' way, with sufficient detail to enable you to 'lift' them, photocopy them and run your lesson(s) with minimal fuss straight out of the box.



[www.kitronik.co.uk/5667](http://www.kitronik.co.uk/5667)



### Cross-Curricular

Includes lessons for Design & Technology, Computing, Science, Geography plus 2 enrichment challenges.



### Just Add micro:bits

The box includes everything else you need to get started with lessons promptly.



### Designed by Teachers

Kitronik worked alongside award winning teachers to ensure the lessons are both relevant & engaging.



### Curriculum Linked

Each lesson has suggested specification links to national curriculums.



### Lesson Resources

Schemes of work, Lesson Plans, Slideshows, Project Books, Worksheets, Build Posters & more.



### Digital Versions

All of the lessons are provided on a USB drive in editable formats for you to print, photocopy & modify.



### Tried & Tested

Tested in real classrooms by real pupils to ensure the lessons are suitable for all.



### School-Friendly

Packaged into a reusable Gratnells Tray for a quick & tidy classroom.

| Description                                     | Code | 1+      | 5+      |
|---|------|---------|---------|
| Kitronik Lesson in a Box® Visual Computing Pack | 5667 | £399.95 | £359.95 |

## HALO FOR THE BBC micro:bit

Add some colour to your next coding project with our Halo board for the BBC micro:bit. The Halo incorporates 24 individually addressable full colour ZIP LEDs. This means that each LED can display a huge spectrum of colours, allowing amazing colourful effects to be achieved.

The Halo bolts directly onto the BBC micro:bit using five bolts which are secure and robust. The board also has extension connector pads (0.1" pitch) allowing more ZIP LEDs to be connected. The P1 and P2 micro:bit pins are also broken out to 0.1" pads along with power and GND. This allows for additional connections to components such as servo motors.

 [www.kitronik.co.uk/5625](http://www.kitronik.co.uk/5625)



The Halo takes a supply voltage of 3.5V-5V and provides a regulated power supply to BBC micro:bit. Power can be connected using the JST input using the 3xAAA battery holder, or LiPo battery (both listed below), or JST lead (listed on page 153). Alternatively, you can solder a power supply directly to the solder pads on the PCB.



Programming the ZIP LEDs is easy using the **Microsoft MakeCode Block editor**.

Learn how with our guide:  [www.kitronik.co.uk/codezip](http://www.kitronik.co.uk/codezip)

| Description                                      | Code | 1+     | 10+    | 50+   | 100+  |
|--|------|--------|--------|-------|-------|
| Halo for the BBC micro:bit                       | 5625 | £11.50 | £10.50 | £9.50 |       |
| Polymer Lithium Ion Battery (3.7V, 1Ah)          | 4652 | £4.25  | £3.85  |       | £3.50 |
| 3x AAA Battery Box with Switch and JST Connector | 2224 | £1.30  | £1.20  |       | £0.95 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this spread.

## KITRONIK :GAME ZIP 64 FOR THE BBC micro:bit

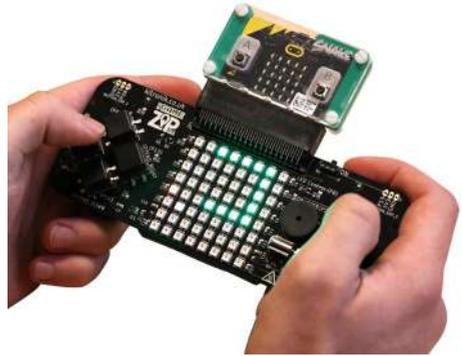
The Kitronik :GAME ZIP 64 is the ultimate retro gaming accessory for the BBC micro:bit. It has been designed to be an all-in-one handheld gaming platform, which also includes a built in 64 (8x8) individually addressable, full colour ZIP LED screen. It also features on-board sound, 4 x directional buttons, 2 fire buttons, haptic feedback, and breakout points so shoulder buttons or I2C devices can be added. All of these features are fully programmable.



Requires 3 x AA batteries.



[www.kitronik.co.uk/5626](http://www.kitronik.co.uk/5626)



| Description                                   | Code | 1+     | 10+    | 50+   |
|---|------|--------|--------|-------|
| Kitronik :GAME ZIP 64 for the BBC micro:bit   | 5626 | £30.50 | £28.50 |       |
| Kitronik :GAME ZIP 64 laser cut cover – clear | 5639 | £3.20  | £3.00  | £2.75 |

## KITRONIK :GAME CONTROLLER FOR THE BBC micro:bit

The Kitronik :GAME Controller for the BBC micro:bit is a retro gaming accessory for the BBC micro:bit. It is a programmable gamepad-style controller enabling a better gaming experience on the micro:bit itself, or the ability to control other devices over micro:bit radio.

The :GAME Controller is similar in design and features to the :GAME ZIP 64, only without the ZIP LED screen. This offers great value if the micro:bit's own LED matrix is sufficient for the game or when it will be used to control other devices such as robots and buggies. It will also be much lighter on power consumption than its larger/older sibling.



Requires 2 x AA batteries.



[www.kitronik.co.uk/5644](http://www.kitronik.co.uk/5644)

| Description                                     | Code | 1+     | 10+    | 50+    |
|---|------|--------|--------|--------|
| Kitronik :GAME Controller for the BBC micro:bit | 5644 | £13.00 | £11.50 | £11.00 |

# WONDERING HOW TO USE THE :GAME ZIP 64 IN THE CLASSROOM?

We have that covered with our range of teacher resources:



[www.kitronik.co.uk/5626](http://www.kitronik.co.uk/5626)

## KITRONIK :GAME ZIP 64 FOR THE BBC micro:bit CLASS PACK

The :GAME ZIP 64 class pack is a super starter for simple game programming in the classroom.

Containing 10 of our fantastic :GAME ZIP 64 hand held gaming platforms, USB Cables for programming, all the batteries you'll need, and storage slots for ten BBC micro:bits (not included) this the best way to get started with handheld gaming. The sturdy storage solution from Gratnell's means lessons can be taught then easily packed away, keeping your kit safe and secure!

Example game code and five lesson plans are available from our website.



[www.kitronik.co.uk/5626-10](http://www.kitronik.co.uk/5626-10)

| Description  | Code    | 1+      |
|--|---------|---------|
| Kitronik :GAME ZIP 64 for the BBC micro:bit class pack | 5626-10 | £285.00 |

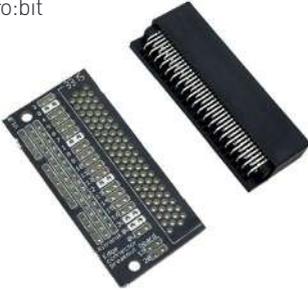


**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this spread.

## EDGE CONNECTOR BREAKOUT BOARD FOR THE BBC micro:bit

This breakout board has been designed to offer an easy way to connect additional circuits and hardware to the pins on the edge of the BBC micro:bit. It provides access to a large number of the BBC micro:bit processor pins, allowing a lot of extra functionality to be added.

**Requires soldering.**



[www.kitronik.co.uk/5601](http://www.kitronik.co.uk/5601)

| Code | 1+    | 10+   |
|------|-------|-------|
| 5601 | £2.60 | £2.10 |

## EDGE CONNECTOR BREAKOUT BOARD FOR THE BBC micro:bit – PRE-BUILT

This is a 'pre-built' version of our Edge Connector Breakout Board and is ideal for users who do not want to solder all of the pin connections. It is also supplied with double row of pin connectors fitted, making it ideal for use with male to female jumper wires.



[www.kitronik.co.uk/5601b](http://www.kitronik.co.uk/5601b)

| Code  | 1+    | 10+   | 50+   |
|-------|-------|-------|-------|
| 5601B | £4.20 | £3.85 | £3.35 |

## PROTOTYPING SYSTEM FOR THE BBC micro:bit



This is a great way to start making circuits and making experiments. It gives access to the pins on the bottom of the BBC micro:bit using our specially designed Edge Connector Breakout Board. This is used in conjunction with a Small Prototype Breadboard which makes it easy to connect additional components using the included jumper wires. **No soldering required.**

[www.kitronik.co.uk/5609](http://www.kitronik.co.uk/5609)

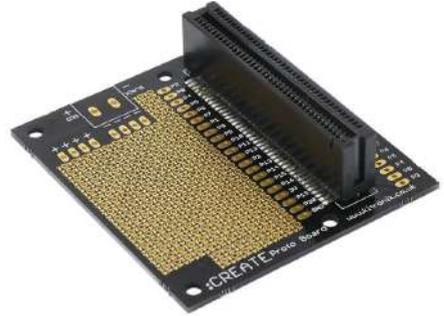
| Description                              | Code | 1+     | 10+    | 50+    |
|--|------|--------|--------|--------|
| Prototyping System for the BBC micro:bit | 5609 | £12.75 | £11.50 | £10.50 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this spread.

## :CREATE PROTO BOARD FOR THE BBC micro:bit

The :CREATE Proto Board is perfect for making more permanent prototypes with your BBC micro:bit. The board comes with a presoldered header which allows you to easily access all of the important pins on the bottom edge of the BBC micro:bit. Attaching components to the :CREATE board is made easy with predrilled holes and an innovative pattern of solder pads, which allows you to use through hole and surface mount components with ease.



[www.kitronik.co.uk/5634](http://www.kitronik.co.uk/5634)

| Description                               | Code | 1+    | 10+   | 50+   |
|---|------|-------|-------|-------|
| :CREATE Proto Board for the BBC micro:bit | 5634 | £5.00 | £4.50 | £4.05 |

## BREADBOARD BREAKOUT FOR THE BBC micro:bit

This breakout board has been designed to offer an easy way to connect additional circuits and hardware to the pins on the edge of the BBC micro:bit using a breadboard. The micro:bit slots into the edge connector on the top of the PCB and the pins fit onto a standard breadboard (sold separately). A pin label sticker is included.



[www.kitronik.co.uk/5664](http://www.kitronik.co.uk/5664)

| Code | 1+    | 10+   | 50+   |
|------|-------|-------|-------|
| 5664 | £4.00 | £3.60 | £3.25 |

## TERMINAL BLOCK BREAKOUT BOARD FOR THE BBC micro:bit

The Terminal breakout board for BBC micro:bit breaks out all the signal & power pins on the micro:bit to terminal blocks for a more permanent solderless solution. It features a terminal block breakout point for each pin, a switch-controlled input block, and two output power blocks.



[www.kitronik.co.uk/5651](http://www.kitronik.co.uk/5651)

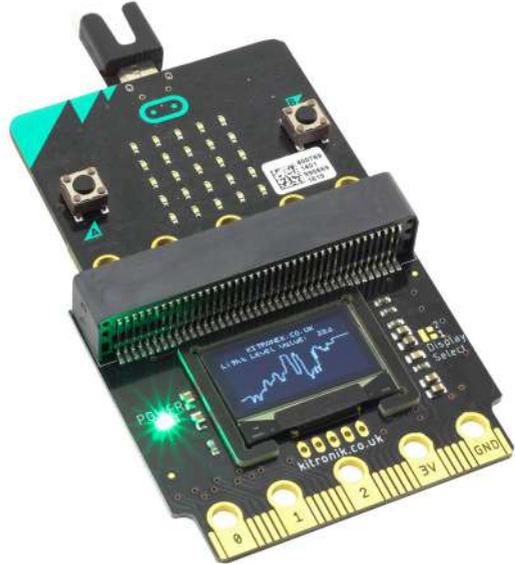
| Code | 1+    | 10+   | 50+   |
|------|-------|-------|-------|
| 5651 | £8.25 | £7.45 | £6.75 |

## :VIEW Graphics128 OLED display 128x64 FOR THE BBC micro:bit

**NEW!**

The Kitronik :VIEW Graphics128 OLED display gives the user the ability to add a monochrome 128x64 display to the BBC micro:bit.

The onboard edge connector allows the micro:bit to slot into the board without any additional fixings. The board also features a micro:bit style I/O connector which means it can be slotted into any other micro:bit accessory that has a slot for a micro:bit to slot into.



[www.kitronik.co.uk/56115](http://www.kitronik.co.uk/56115)

| Description  | Code  | 1+     | 10+    | 50+   |
|--|-------|--------|--------|-------|
| :VIEW Graphics128 OLED display for the BBC micro:bit | 56115 | £11.50 | £10.50 | £9.50 |

## :VIEW text32 LCD SCREEN FOR THE BBC micro:bit

Get meaningful text readouts from your micro:bit projects with the Kitronik :VIEW Text32, a 32 character 2 line display that has a micro:bit style edge connector.

On the back of the :VIEW Text32 is a 3 x AAA battery holder to provide power to the :VIEW Text32, the attached micro:bit, and the replicated edge connector. There is a power switch for turning the battery supply on and off. The replicated edge connector can supply 90mA (as per the normal micro:bit). Custom blocks for the MakeCode are available.



^ Example use.

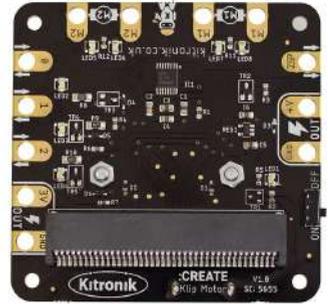
[www.kitronik.co.uk/5650](http://www.kitronik.co.uk/5650)

| Description                                   | Code | 1+     | 10+    | 50+    |
|---|------|--------|--------|--------|
| :VIEW text32 LCD Screen for the BBC micro:bit | 5650 | £16.00 | £15.00 | £14.00 |

## KLIP MOTOR DRIVER FOR THE BBC micro:bit

The Klip Motor Driver for the BBC micro:bit allows you to do more than just drive motors. It breaks out pins 0, 1, 2, 3V & GND from the micro:bit & connects to ZIP LEDs.

Power is provided by a switch controlled battery supply (3 x AA batteries, not included), which also powers the micro:bit. Each output has its own indicator LED. **No soldering required.**



< The Klip Motor Driver in use with other Kitronik products.



[www.kitronik.co.uk/5655](http://www.kitronik.co.uk/5655)

| Description                             | Code | 1+     | 10+    | 50+    |
|---|------|--------|--------|--------|
| Klip Motor Driver for the BBC micro:bit | 5655 | £12.75 | £12.00 | £11.00 |

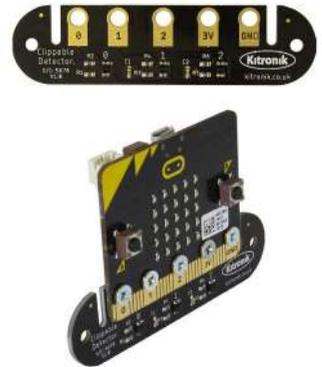
## KITRONIK CLIPPABLE DETECTOR BOARD

This Clippable Detector Board detects light, objects and can follow lines. The board is compatible directly with the micro:bit and the Klip Motor Board. The board works by using three evenly spaced phototransistors to detect the reflectiveness of different surfaces. The sensors provide an analogue voltage to the microbit. Five connections are required for full operation. These connections match those on a micro:bit and can be attached using either bolts or croc-clip leads.

The Clippable Detector board in use with a micro:bit >



[www.kitronik.co.uk/5678](http://www.kitronik.co.uk/5678)



| Description                            | Code | 1+    | 10+   | 50+   |
|--|------|-------|-------|-------|
| Kitronik Clippable Detector Board V1.0 | 5678 | £4.05 | £3.65 | £3.35 |



**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this spread.

## COMPACT MOTOR DRIVER BOARD FOR THE BBC micro:bit

This board provides a simple way to add motor driving capability to a BBC micro:bit. It allows two motors to be driven with full forward, reverse & stop control. It has terminal blocks to connect four input devices and a regulated 3V supply is fed in to the 80 way connector to power the inserted BBC micro:bit. The board also includes a power switch and a power indication LED.



[www.kitronik.co.uk/5698](http://www.kitronik.co.uk/5698)

| Description                                      | Code | 1+    | 10+   | 50+   |
|--|------|-------|-------|-------|
| Compact Motor Driver Board for the BBC micro:bit | 5698 | £8.95 | £8.20 | £7.70 |

## COMPACT 16 SERVO DRIVER BOARD FOR THE BBC micro:bit

This compact 16 servo driver board for the micro:bit allows up to 16 Remote Control (RC) servos to be driven simultaneously. It is based on the PCA9865 driver IC. The board produces a regulated power supply for the micro:bit, removing the need to power it directly. Power (maximum 12V) can be supplied to the board via either the dedicated screw connections, or the 0.1" pitch Power connector. The board also includes a power switch and a power indication LED.

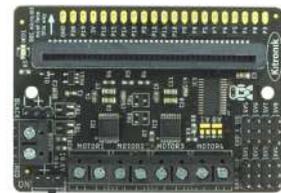


[www.kitronik.co.uk/5694](http://www.kitronik.co.uk/5694)

| Description   | Code | 1+    | 10+   | 50+   |
|---|------|-------|-------|-------|
| Compact 16 Servo Driver Board for the BBC micro:bit | 5694 | £9.00 | £8.25 | £7.50 |

## COMPACT ROBOTICS BOARD FOR BBC micro:bit

This board is perfect for any micro:bit based robotics project. It can drive 4 DC motors with full forward, reverse and stop control, plus it can also control 8 servo motors. The DC motor connections use terminal blocks and there are pin headers for the servo connections. The board works from a 3V to 10.8V supply voltage and provides a 3V regulated supply to power the micro:bit. The board also includes a power switch and a power indication LED.



[www.kitronik.co.uk/5693](http://www.kitronik.co.uk/5693)

| Description                                  | Code | 1+     | 10+    | 50+    |
|--|------|--------|--------|--------|
| Compact Robotics Board for the BBC micro:bit | 5693 | £13.50 | £12.50 | £11.50 |

## KITRONIK SERVO:LITE BOARD FOR THE BBC micro:bit

The Servo:Lite board for the BBC micro:bit is a simple board that allows you to easily connect and control low power servo motors (servos must be capable of operating at 3.3V) using the BBC micro:bit. It is connected to the micro:bit using five bolts. Connect two servos in standard configuration and it can drive up to 3 servos if the addressable 'ZIP' LEDs aren't needed.


[www.kitronik.co.uk/5623](http://www.kitronik.co.uk/5623)

| Description                              | Code | 1+    | 10+   | 50+   |
|--|------|-------|-------|-------|
| Kitronik Servo:Lite board for :MOVE mini | 5623 | £9.70 | £8.95 | £8.45 |

## 'HAMBURGER' MINI SPEAKER

This 3W Mini Speaker is a great, economical speaker option for any project needing stand-alone sound within a small footprint. It is also an ideal speaker choice for BBC micro:bit projects as it will work directly with our audio cable for the BBC micro:bit (see below).

The speaker features a built-in rechargeable lithium polymer battery for portable applications, a 3.5mm stereo jack for connecting to the audio source and has two volume options (quiet and loud).


[www.kitronik.co.uk/3340](http://www.kitronik.co.uk/3340)

| Description              | Code | 1+    |
|--------------------------|------|-------|
| 'Hamburger' Mini Speaker | 3340 | £4.95 |

## AUDIO CABLE FOR THE BBC micro:bit

Simply connect the crocodile clips to the BBC micro:bit, plug headphones into the 3.5mm socket, and you are ready to code some music.

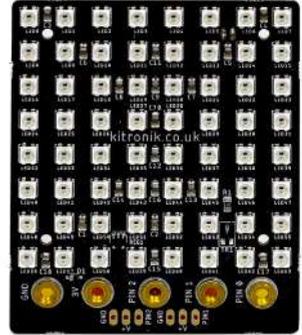

[www.kitronik.co.uk/5622](http://www.kitronik.co.uk/5622)


| Description                       | Code | 1+    | 10+   | 50+   |
|-----------------------------------|------|-------|-------|-------|
| Audio Cable for the BBC micro:bit | 5622 | £2.20 | £1.80 | £1.65 |

## ZIP TILE FOR THE BBC micro:bit

The Kitronik ZIP Tile is an 8 x 8 display panel for the BBC micro:bit. It can scroll text, show all the colours of the rainbow (and more) and multiple Tiles can be linked up to make even bigger displays!

It features 64 colour addressable LEDs arranged in an 8 x 8 grid, ZIP LED expansion points on the left, right and top of the board, and the ability to connect a BBC micro:bit with both bolts and croc clips. It also breaks out P1 & P2 to standard 0.1 (2.54mm) footprints. Each of these pins also have the required supply voltage and GND pads.

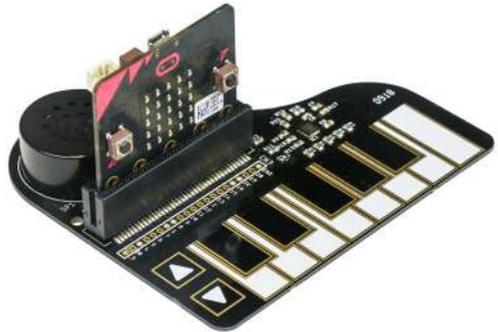


[www.kitronik.co.uk/5645](http://www.kitronik.co.uk/5645)

| Description                    | Code | 1+     | 10+    | 50+    |
|--------------------------------|------|--------|--------|--------|
| ZIP Tile for the BBC micro:bit | 5645 | £15.50 | £14.00 | £13.00 |

## :KLEF PIANO FOR THE BBC micro:bit

Just slot in a micro:bit and use sound generation blocks and code in Microsoft MakeCode to generate tones and sounds. Using 15 capacitive touch keys, including a whole keyboard octave, students can unleash their inner Mozart. It comes fully assembled with a built-in speaker and is ready to use, with **no soldering required**.



 Requires 5V micro-USB power supply.

[www.kitronik.co.uk/5631](http://www.kitronik.co.uk/5631)

| Description                       | Code | 1+     | 10+    | 50+    |
|-----------------------------------|------|--------|--------|--------|
| :KLEF Piano for the BBC micro:bit | 5631 | £16.00 | £14.50 | £12.95 |

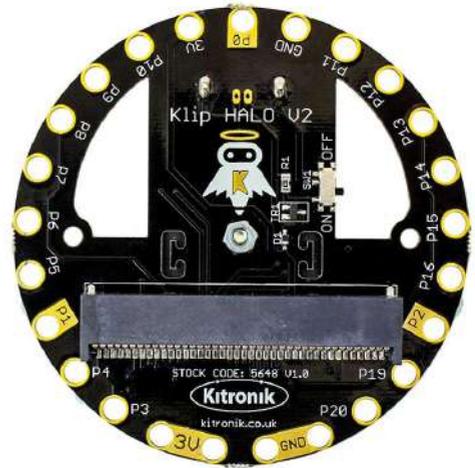


**PLEASE NOTE:** The BBC micro:bit is **not** included with the products on this spread.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## KLIP HALO V2.0 FOR THE BBC micro:bit

The Klip Halo V2.0 board for the BBC micro:bit breaks out each of the 19 GPIO pins from the BBC micro:bit, with easily accessible, clearly marked connection points compatible with both crocodile clips and 4mm banana plugs. The edge connector allows simple assembly by inserting the BBC micro:bit into the Klip Halo V2.0.



The Klip Halo V2.0 with comes with two options, a battery cage(BAT) or a JST(JST) connector, and an on/ off switch. The switch also turns on / off the power to the 3V connections.

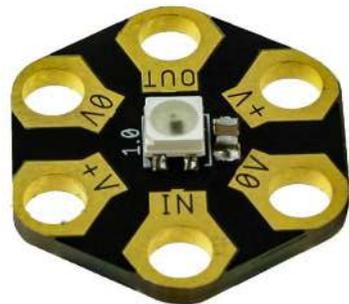
[www.kitronik.co.uk/5648-BAT](http://www.kitronik.co.uk/5648-BAT)

[www.kitronik.co.uk/5648-JST](http://www.kitronik.co.uk/5648-JST)

| Description                              | Code     | 1+    | 10+   | 50+   |
|--|----------|-------|-------|-------|
| Klip Halo V2.0 with 2x AA Battery Holder | 5648-BAT | £7.40 | £6.65 | £6.05 |
| Klip Halo V2.0 with JST                  | 5648-JST | £7.00 | £6.35 | £5.75 |

## ZIP HEX LED - PACK OF 5

The ZIP Hex LED is a programmable RGB LED, capable of producing a full spectrum of colours. The can be chained together and easily connected with crocodile leads and used with the Kitronik Klip Halo range. This is just one example of a product that works well with the Klip Halo.



[www.kitronik.co.uk/35140](http://www.kitronik.co.uk/35140)

| Description             | Code  | 1+    | 10+   |
|-------------------------|-------|-------|-------|
| ZIP Hex LED – pack of 5 | 35140 | £4.95 | £4.55 |

## MONK MAKES - CLIP ON EXPANSION BOARDS FOR THE BBC micro:bit

This range of micro:bit add-on boards from Monk Makes allows users to add extra functionality to their micro:bit project by simply connecting the add-on board using crocodile 'clip' wires. **BBC micro:bits are sold seperately.**



### LOW VOLTAGE RELAY FOR micro:bit (SOLID STATE)

The Relay for the BBC micro:bit is a solid-state (no moving parts) relay that allows an output of a micro:bit to turn things on and off. A micro:bit can turn an LED on and off directly, but anything more powerful requires something like a relay or a transistor. Using a transistor to switch something on and off requires a shared ground connection with the micro:bit and a knowledge of electronics that you or your students may not be ready for. This Relay for micro:bit is much easier to use, acting like a simple micro:bit controlled switch.



[www.kitronik.co.uk/46123](http://www.kitronik.co.uk/46123)

### SENSOR BOARD FOR micro:bit

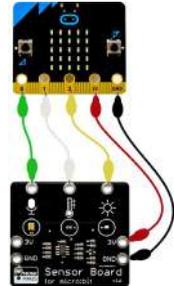
The Sensor Board allows you to detect sound levels, temperature, and light levels.

**Sound level:** It senses sound level with a MEMs, which is a microphone on a chip that also features a pre-amplifier circuit.

**Temperature level:** The temperature output from the board is a voltage that indicates the temperature.

**Light level:** The light sensor uses a photo-transistor to measure the light level.

Sensor board >  
connection  
example.



[www.kitronik.co.uk/46122](http://www.kitronik.co.uk/46122)

### POWERED SPEAKER BOARD FOR micro:bit

The speaker board is a neat little amplified speaker that connects to your micro:bit with crocodile clips. Despite its diminutive size, the speaker is quite loud.

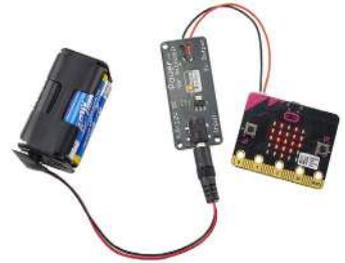


[www.kitronik.co.uk/46124](http://www.kitronik.co.uk/46124)

| Description  | Code  | 1+    |
|--|-------|-------|
| Monk Makes - Sensor board for the BBC micro:bit      | 46122 | £7.15 |
| Monk Makes - Low voltage relay for the BBC micro:bit | 46123 | £7.15 |
| Monk Makes - Powered speaker for the BBC micro:bit   | 46124 | £7.50 |

## MONK MAKES - POWER BOARD FOR THE BBC micro:bit

This board has a standard DC barrel jack socket that takes an input voltage of 4.5 to 12V DC and converts to a regulated 3.3V output that you can use to power your micro:bit using the JST battery connector attached to wires coming from the other end of the board.



[www.kitronik.co.uk/46144](http://www.kitronik.co.uk/46144)

Connection example, micro:bit not included.

| Description                                    | Code  | 1+    |
|--|-------|-------|
| Monk Makes - Power Board for the BBC micro:bit | 46144 | £7.15 |

## MONK MAKES - SERVO BOARD FOR THE BBC micro:bit

This board provides a really easy way to attach up to three servomotors to a micro:bit. The board requires a power supply or battery pack to provide 5 or 6V to the servomotors. It includes a voltage regulator that will supply 3V back to the micro:bit, so that you don't have to power it separately.



[www.kitronik.co.uk/46145](http://www.kitronik.co.uk/46145)

Connection example; leads, servos and micro:bit not included.

| Description                                    | Code  | 1+    |
|--|-------|-------|
| Monk Makes - Servo Board for the BBC micro:bit | 46145 | £7.15 |

## MONK MAKES - 7 SEGMENT FOR THE BBC micro:bit

The 7-segment for micro:bit is a four digit 7-segment display for micro:bit. You can use it to display numbers, but it can also display letters and other characters, albeit with the limits imposed by the 7 segments of each digit.



[www.kitronik.co.uk/46138](http://www.kitronik.co.uk/46138)

Connection example, leads and micro:bit not included.

| Description                                  | Code  | 1+     | 10+    |
|--|-------|--------|--------|
| Monk Makes - 7 Segment for the BBC micro:bit | 46138 | £12.00 | £11.65 |

## MONK MAKES - STARTER KIT FOR THE BBC micro:bit

This kit offers users as young as 10 an introduction to learning about connecting electronics to the BBC micro:bit. Uses alligator clips, no soldering required.



[www.kitronik.co.uk/46142](http://www.kitronik.co.uk/46142)



| Description   | Code  | 1+     |
|---|-------|--------|
| Monk Makes - Electronic Starter Kit for the BBC micro:bit | 46142 | £29.95 |

## MONK MAKES - SERVO KIT FOR THE BBC micro:bit

The Monk Makes Servo kit for micro:bit provides you with a servo board, three servos, battery cage and alligator clips. Just add micro:bit and batteries.



[www.kitronik.co.uk/46147](http://www.kitronik.co.uk/46147)



| Description                                  | Code  | 1+     |
|--|-------|--------|
| Monk Makes - Servo Kit for the BBC micro:bit | 46147 | £19.25 |

## MONK MAKES - RGB LED FOR THE BBC micro:bit

The Monk Makes RGB LED for micro:bit provides a colourful add-on to your micro:bit. Connect it up with alligator/crocodile clips and then use the three outputs of your micro:bit to control the red, green and blue channels to mix up any colour of light you want.



[www.kitronik.co.uk/46137](http://www.kitronik.co.uk/46137)



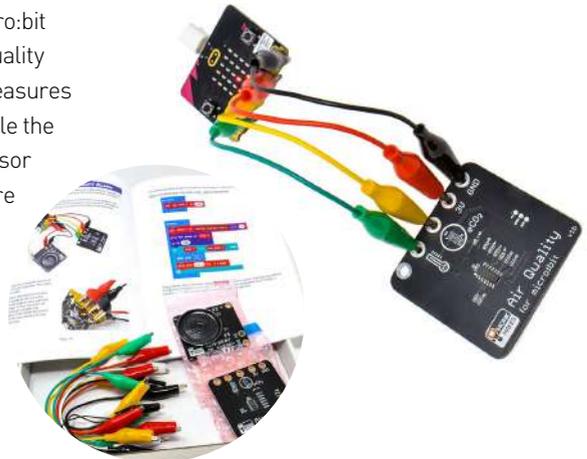
Connection example, leads and micro:bit not included. [^](#)

| Description                                | Code  | 1+    | 10+   |
|--|-------|-------|-------|
| Monk Makes - RGB LED for the BBC micro:bit | 46137 | £2.95 | £2.75 |

## MONK MAKES - AIR QUALITY KIT FOR BBC micro:bit

**NEW!**

The Monk Makes Air Quality Kit for micro:bit is based around the Monk Makes Air Quality Sensor. This add-on for the microbit measures the quality of the air in a room - how stale the air is. The outputs of the Air Quality Sensor board are analogue: one for temperature and one for eCO2 (estimated carbon dioxide). These outputs can be read by a micro:bit and either displayed, for instance, as an air quality meter or logged over a period of time for all sorts of interesting experiments.


[www.kitronik.co.uk/46170](http://www.kitronik.co.uk/46170)

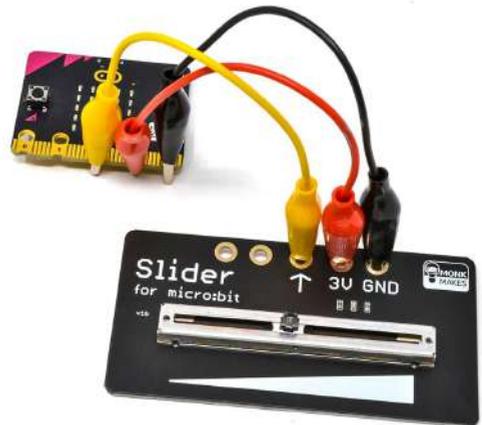
Connection example, micro:bit not included.

| Description                                    | Code  | 1+     |
|--|-------|--------|
| Monk Makes - Air Quality Kit for BBC micro:bit | 46170 | £37.50 |

## MONK MAKES - SLIDER FOR BBC micro:bit

**NEW!**

The Monk Makes Slider for micro:bit allows you to interact with your micro:bit by sliding a control left and right. The board uses a 10kΩ linear variable resistor (pot) to output a voltage between 0 and 3V that can be measured in your micro:bit programs using one of the micro:bit connections as an analogue input. The kit includes the Slider for micro:bit itself plus a set of 5 alligator clip leads. Comprehensive instructions with example projects are provided as a free download.


[www.kitronik.co.uk/46171](http://www.kitronik.co.uk/46171)

Connection example, micro:bit not included.

| Description                           | Code  | 1+    |
|---------------------------------------|-------|-------|
| Monk Makes - Slider for BBC micro:bit | 46171 | £8.25 |

## PIMORONI - scroll:bit LED DISPLAY FOR THE BBC micro:bit

This is a little display with a lot of LEDs. It has 119 bright white LEDs, perfect for scrolling messages, animations, graphs and more! Just slot in a micro:bit and code with Microsoft MakeCode Editor or MicroPython. This works in a similar way to the built-in LED matrix on the BBC micro:bit. Comes fully assembled and ready to use, no soldering required.

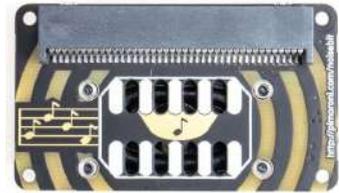


[www.kitronik.co.uk/46129](http://www.kitronik.co.uk/46129)

| Description   | Code  | 1+     |
|---|-------|--------|
| Pimoroni - scroll:bit LED display for the BBC micro:bit | 46129 | £13.25 |

## PIMORONI - noise:bit ADD-ON FOR THE BBC micro:bit

Just slot in your micro:bit and use sound generation blocks and code in Microsoft MakeCode and MicroPython to generate tone, sounds, speech and add sound to your projects. Comes fully assembled and ready to use, no soldering required.



[www.kitronik.co.uk/46163](http://www.kitronik.co.uk/46163)

| Description                                       | Code  | 1+     |
|---|-------|--------|
| Pimoroni - noise:bit add-on for the BBC micro:bit | 46163 | £12.75 |

## PIMORONI - enviro:bit ADD-ON FOR THE BBC micro:bit

Sense the world around you with the enviro:bit! It's loaded with sensors for sound, air and weather, and colour and light. Just slot in a micro:bit and use the Microsoft MakeCode Editor or MicroPython. These sensors work well with the LED matrix on the micro:bit. Comes fully assembled and ready to use, no soldering required.



[www.kitronik.co.uk/46133](http://www.kitronik.co.uk/46133)

| Description  | Code  | 1+     |
|--|-------|--------|
| Pimoroni - enviro:bit add-on for the BBC micro:bit | 46133 | £18.50 |

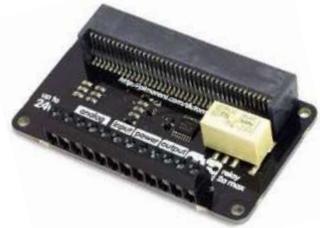
# TRY OUR CUSTOM PCB SERVICE

Let us take the hassle out of manufacturing your school's PCBs.

 [www.kitronik.co.uk/custom-pcbs](http://www.kitronik.co.uk/custom-pcbs)

## PIMORONI - automation:bit ADD-ON FOR THE BBC micro:bit

Control and monitor your world with the automation:bit Add-On for the BBC micro:bit! It's tolerant of up to 24V, with analogue and digital inputs, outputs, and a relay, so it's ideal for automating low-voltage systems in the home.

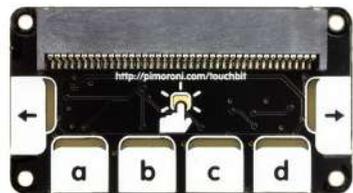


 [www.kitronik.co.uk/46136](http://www.kitronik.co.uk/46136)

| Description  | Code  | 1+     |
|--|-------|--------|
| Pimoroni - automation:bit add-on for the BBC micro:bit | 46136 | £12.35 |

## PIMORONI - touch:bit ADD-ON FOR THE BBC micro:bit

The touch:bit features six handy touch-sensitive buttons and LEDs for the micro:bit. Use touch:bit as a controller for games on micro:bit's LED matrix, or combine it with the radio functionality and use it as a controller for a robot. You can easily link functions to specific button presses, have the LEDs on each button light automatically on a touch, or set the LEDs manually.



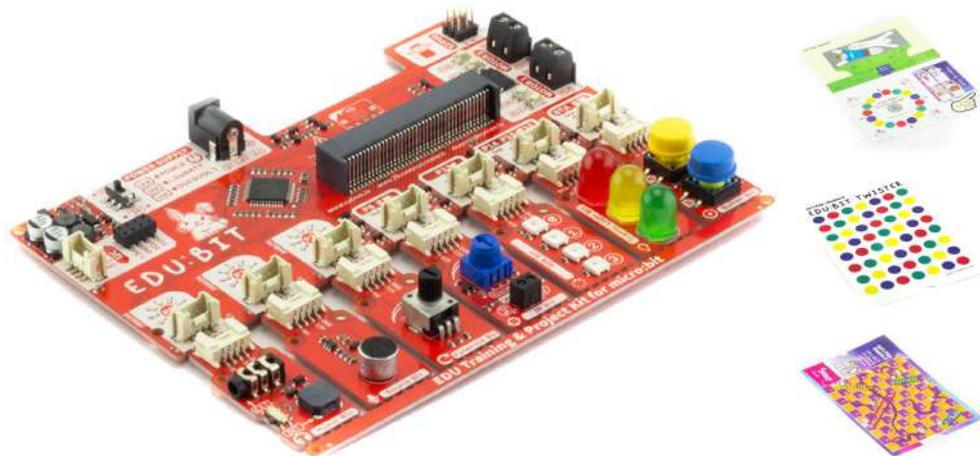
 [www.kitronik.co.uk/46139](http://www.kitronik.co.uk/46139)

| Description                                       | Code  | 1+    |
|---|-------|-------|
| Pimoroni - touch:bit add-on for the BBC micro:bit | 46139 | £9.95 |

## EDU:BIT TRAINING & PROJECT KIT FOR BBC micro:bit

**NEW!**

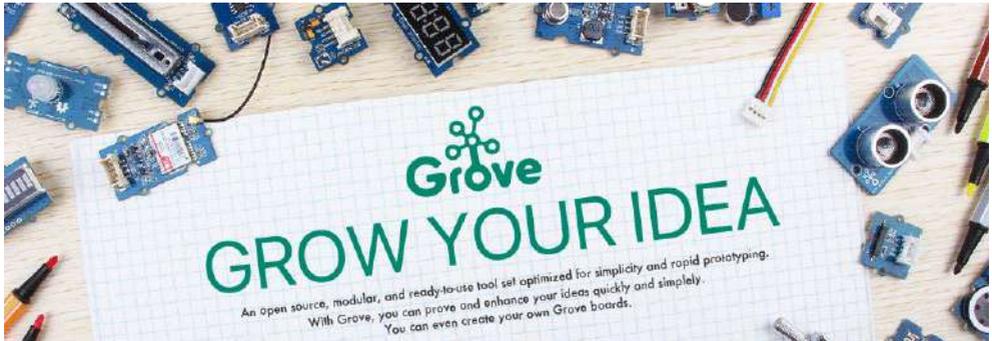
This beginner-friendly micro:bit kit is specially designed to encourage kids to explore STEAM/STEM and to learn to code. You can easily program EDU:BIT using the Microsoft MakeCode Editor. Just add the EDU:BIT MakeCode Extension and you're good to go. If you're a beginner, you can start with the block programming mode; simply drag, drop and snap the coding blocks together. For more advanced users, you can easily switch into JavaScript or Python mode on the MakeCode Editor.



New to coding? Don't worry. This kit comes with a booklet covering 10+1 hands-on coding lessons, which have been creatively structured to introduce programming basics in a fun and engaging manner. Each chapter features a classic game such as Rock Paper Scissors, Snakes and Ladders, Twister, and Simon Says. Follow the step-by-step guides to build the games and then have fun playing with your friends! \*Game accessories are provided in this kit. At the end of each chapter, there is a challenge which requires you to apply what you've learned to build a useful application for your classroom. Give it a try!


[www.kitronik.co.uk/46167](http://www.kitronik.co.uk/46167)
[^ Kit of parts.](#)

| Description  | Code  | 1+     | 10+    |
|--|-------|--------|--------|
| Edu:bit Training & Project Kit for BBC micro:bit (without micro:bit) | 46167 | £35.50 | £34.50 |

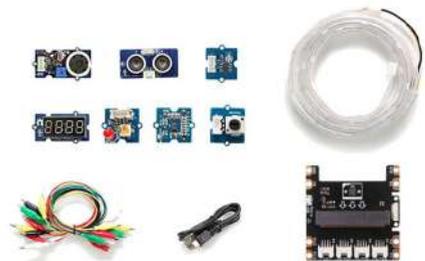


Grove is a modular, standardised connector prototyping system. Grove takes a building block approach to assembling electronics. Compared to breadboard or solder based systems, it is easier to connect, experiment and build with. Simplifying learning. The Grove system allows you to build real systems.

The Base unit, generally a microprocessor (like the BBC micro:bit), allows for easy connection of any input or output from Grove modules. Every Grove module typically addresses a single function, such as a simple button or a more complex temperature sensor.

## GROVE STARTER KIT FOR THE BBC micro:bit

The Grove Inventor's Kit for micro:bit brings endless possibilities to your micro:bit. The core board in this kit is the Grove shield for micro:bit v2.0, with which you can use plenty of Grove modules including sensors, display, actuator to interact with micro:bit. If you've never used and have no idea what Grove is, with Grove, there is no need for soldering or jumper wires. Your prototyping will be easier and much more convenient. **No soldering required.**



### Kit contents:

- 12 experiments.
- Breakout board.
- Sensor and output modules.
- Grove connectors and croc clips.

 [www.kitronik.co.uk/46150](http://www.kitronik.co.uk/46150)

 Requires BBC micro:bit **(not included)**

| Description                             | Code  | 1+     |
|---|-------|--------|
| Grove Starter Kit for the BBC micro:bit | 46150 | £57.95 |

## GROVE MODULES

Combining Grove modules means you can build a prototype quickly and efficiently.



See our full range of modules with individual descriptions on our website:

[www.kitronik.co.uk/grove](http://www.kitronik.co.uk/grove)

| Description                        | Code  | 1+    | 10+   |
|------------------------------------|-------|-------|-------|
| PIR Movement Sensor                | 46149 | £6.45 | £5.85 |
| Button / Tactile Switch            | 46151 | £1.60 | £1.45 |
| Temperature and Humidity Sensor    | 46152 | £9.65 | £9.15 |
| Ultrasonic Distance Sensor         | 46153 | £3.65 | £3.55 |
| Connectors 30cm - 5 pack           | 46154 | £3.10 | £2.95 |
| LED Red                            | 46155 | £1.95 | £1.60 |
| LED Blue                           | 46156 | £1.95 | £1.60 |
| LED Green                          | 46157 | £1.95 | £1.60 |
| LED White                          | 46162 | £1.95 | £1.60 |
| LED Red Green & Blue Flashing      | 46158 | £2.20 | £2.00 |
| Buzzer                             | 46159 | £1.95 | £1.65 |
| Grove Shield for the BBC micro:bit | 5675  | £9.95 | £8.95 |

## GROVE BEGINNER KIT FOR ARDUINO - ALL-IN-ONE ARDUINO COMPATIBLE BOARD

**NEW!**

Powered by an Arduino UNO compatible ATmega320p based Seeeduno Lotus board, this kit also contains 10 additional Grove Arduino sensors all joined together on a single board.


[www.kitronik.co.uk/5326](http://www.kitronik.co.uk/5326)

| Code | 1+     | 10+    |
|------|--------|--------|
| 5326 | £32.00 | £31.00 |

## GROVE - STARTER KIT FOR ARDUINO

**NEW!**

The Grove Starter Kit for Arduino includes an Arduino compatible shield, the Base shield, and 14 additional Arduino sensors and accessories.


[www.kitronik.co.uk/46166](http://www.kitronik.co.uk/46166)

| Code  | 1+     | 10+    |
|-------|--------|--------|
| 46166 | £50.00 | £48.50 |

## GROVE BASE SHIELD V2.0 FOR ARDUINO

**NEW!**

The Base Shield provides a simple way to connect with Arduino boards, without the need for breadboards and jumper wires.


[www.kitronik.co.uk/46168](http://www.kitronik.co.uk/46168)

| Code  | 1+    | 10+   |
|-------|-------|-------|
| 46168 | £4.50 | £4.30 |

## ARDUINO® COMPATIBLE RFID READ AND WRITE MODULE

**NEW!**

This Arduino® Compatible RFID Read and Write Module is pre-assembled and offers a cost-effective way of introducing asset tracking technology into your lessons.


[www.kitronik.co.uk/46169](http://www.kitronik.co.uk/46169)

| Code  | 1+    | 10+   |
|-------|-------|-------|
| 46169 | £9.50 | £9.00 |

## MAKER UNO

**NEW!**

An Arduino UNO compatible board featuring built-in indicator LEDs (x12) for easier troubleshooting, buzzer and input button.

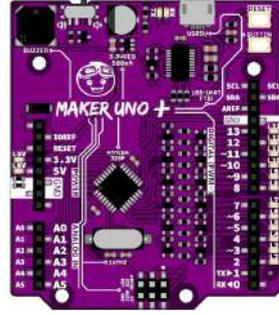


[www.kitronik.co.uk/5320](http://www.kitronik.co.uk/5320)

| Code | 1+    | 10+   |
|------|-------|-------|
| 5320 | £7.50 | £7.00 |

## MAKER UNO PLUS

All the features of the Maker Uno, but using an upgraded USB chip and with a USB cable included.



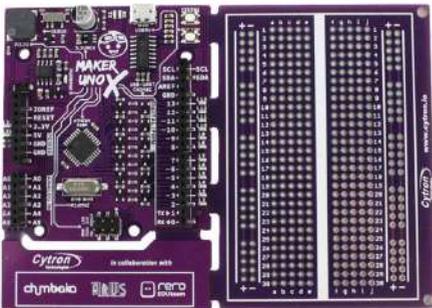
[www.kitronik.co.uk/5314](http://www.kitronik.co.uk/5314)

| Code | 1+     | 10+    |
|------|--------|--------|
| 5314 | £14.00 | £13.50 |

## MAKER UNO X

**NEW!**

A Maker UNO featuring an onboard circuit prototyping area and breadboard (included).



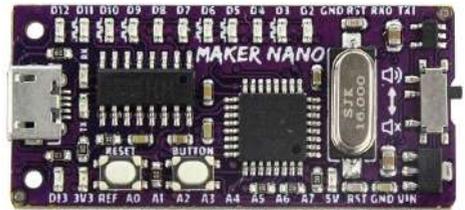
[www.kitronik.co.uk/5321](http://www.kitronik.co.uk/5321)

| Code | 1+     | 10+   |
|------|--------|-------|
| 5321 | £10.00 | £9.50 |

## MAKER NANO

**NEW!**

Maker Nano is an Arduino board specially crafted for building projects while maintaining all the useful features of Maker UNO. Ideal for use directly with breadboards.



[www.kitronik.co.uk/5323](http://www.kitronik.co.uk/5323)

| Code | 1+    | 10+   |
|------|-------|-------|
| 5323 | £7.50 | £7.00 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## KITRONIK INVENTOR'S KIT FOR ARDUINO

This kit is a great way of introducing students to programming & hardware interaction with Arduino.



It contains everything you need to complete 10 experiments, including using LEDs, motors, servo motors, light sensors and capacitors. The easy to follow tutorial book guides the user through everything they need to know about programming an Arduino microcontroller.

It is also a fantastic way of learning how to construct and control electronic circuits. Arduino microcontrollers have a selection of sockets along their edges, and we provide you with the correct connectors to use these easily in conjunction with a breadboard, which in turn makes it easy to connect additional components used in each of the experiments. This is an ideal prototyping platform.

This kit contains **over 50 parts** plus an **exclusive tutorial book!**



[www.kitronik.co.uk/5313](http://www.kitronik.co.uk/5313)

| Description  | Code    | 1+      | 10+    |
|--|---------|---------|--------|
| Kitronik Inventor's Kit for Arduino                    | 5313    | £21.00  | £20.00 |
| Kitronik Inventor's Kit for Arduino - pack of 20       | 5313-20 | £385.00 |        |
| Maker Uno Plus and Kitronik Inventor's Kit for Arduino | 5315    | £32.00  |        |



**PLEASE NOTE:** The Arduino is **not** included with the Kitronik Inventor's Kit.

## KITRONIK DISCOVERY KIT FOR RASPBERRY PI PICO

**NEW!**

Take your first steps in Python and physical computing with the Kitronik Discovery Kit for Raspberry Pi Pico.

The Kitronik Discovery Kit for the Raspberry Pi Pico is a great way to learn about microcontrollers, Python coding, and physical computing. The kit is supplied with all of the components needed to complete the 7 included experiments, including a large-format breadboard. The kit is packaged in sturdy reusable packaging that can be used to store the kit.

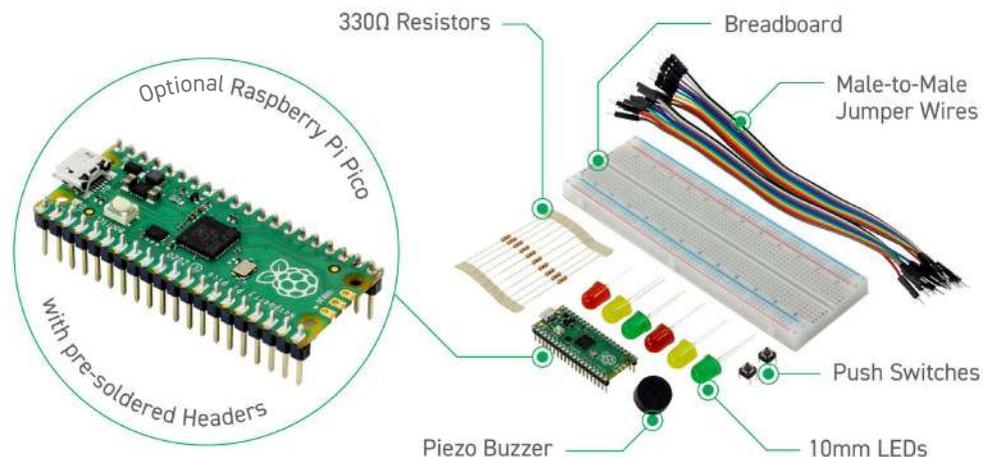


**You can get kits both with and without the Raspberry Pi Pico included!**

 [www.kitronik.co.uk/5325](http://www.kitronik.co.uk/5325)

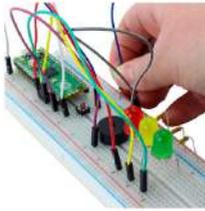
 Requires a micro USB cable

| Description   | Code | 1+     | 10+    | 50+    |
|---|------|--------|--------|--------|
| Discovery Kit for Raspberry Pi Pico (Pico Included)     | 5325 | £15.50 | £14.50 | £13.50 |
| Discovery Kit for Raspberry Pi Pico (Pico NOT Included) | 5333 | £10.00 | £9.00  | £8.00  |





**Made for Raspberry Pi Pico**  
And you can optionally have one included! No tools required, just slot in and you're ready to go!



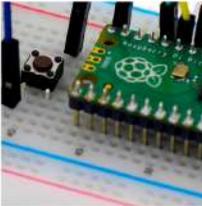
**Seven Fun Experiments**  
Five experiments to take you from complete novice to simulating real-world systems.



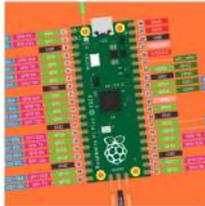
**Detailed Tutorial Book**  
Step-by-step code and build instructions with clear pictures help you to get going quickly.



**Simple Code**  
Microsoft MakeCode Editor is as easy as 1, 2, 3! Just click, drag and drop.



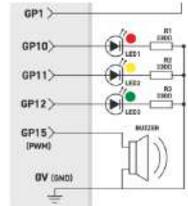
**Simple Build**  
No soldering here! Simply slot the components into the breadboard... and pull them right out again.



**Further Learning**  
Think you've got it all solved? Push yourself with extension challenges after every experiment.



**Build New Projects**  
Unleash your imagination and make your own circuits on the reusable prototyping system.

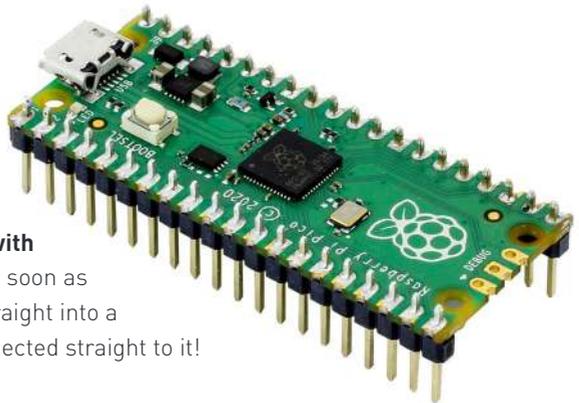


**Electronics Explained**  
Clear circuit diagrams and explanations make getting to grips with electronics easy!

## RASPBERRY PI PICO WITH PRE-SOLDERED HEADERS

**NEW!**

The Raspberry Pi Pico is small, fast, highly affordable, and incredibly versatile. Brought to you by the same team that delivered the Raspberry Pi computer, this brand new microcontroller is set to take the physical computing world by storm. **The Pico is supplied with a full set of pre-soldered headers.** As soon as you unpackage it, it can be plugged straight into a breadboard or have jumper wires connected straight to it!



[www.kitronik.co.uk/5330](http://www.kitronik.co.uk/5330)

| Description                                 | Code | 1+    |
|---|------|-------|
| Raspberry Pi Pico with Pre-soldered Headers | 5330 | £5.00 |

## KITRONIK ROBOTICS BOARD FOR RASPBERRY PI PICO

**NEW!**

This Compact Robotics Board enables the Raspberry Pi Pico (connected via pin header) to drive 4 motors (or 2 stepper motors) and 8 servos. It also features 27 other I/O expansion points and Power and Ground connections. Power is provided via either a terminal block or servo style connector. The supply is then controlled by an on/off power switch to the board and there is also a green LED to indicate when the board has power.



 [www.kitronik.co.uk/5329](http://www.kitronik.co.uk/5329)

 Pico not included (Sold separately)

| Description                                   | Code | 1+     | 10+    | 50+   |
|---|------|--------|--------|-------|
| Kitronik Robotics Board for Raspberry Pi Pico | 5329 | £11.75 | £10.75 | £9.75 |

## KITRONIK MOTOR DRIVER BOARD FOR RASPBERRY PI PICO

**NEW!**

Make the Raspberry Pi Pico the core of your buggy builds with the Kitronik Motor Driver Board for Raspberry Pi Pico! This board allows the Raspberry Pi Pico (connected via pin header) to drive two motors simultaneously with full forward, reverse & stop control, making it ideal for Pico controlled buggy projects. The power is provided via either a terminal block or servo style connector. Power supply is controlled by an on/off power switch and there is a green LED to indicate when the board has power.



 [www.kitronik.co.uk/5331](http://www.kitronik.co.uk/5331)

 Pico not included (Sold separately)

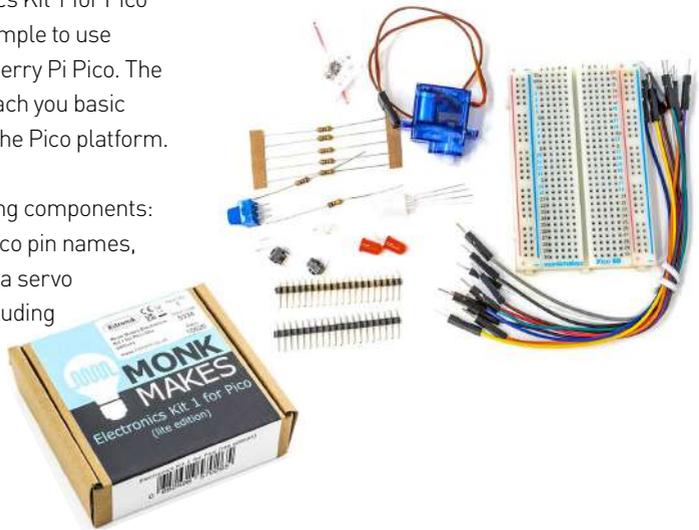
| Description                                       | Code | 1+    | 10+   | 50+   |
|---|------|-------|-------|-------|
| Kitronik Motor Driver Board for Raspberry Pi Pico | 5331 | £7.50 | £6.75 | £6.25 |

## MONK MAKES ELECTRONICS KIT 1 FOR PICO (LITE EDITION)

**NEW!**

The Monk Makes Electronics Kit 1 for Pico (lite edition) is a low cost, simple to use electronic Kit for the Raspberry Pi Pico. The kit has been designed to teach you basic electronics and coding via the Pico platform.

The kit includes the following components: custom breadboard with Pico pin names, jumper wires, header pins, a servo motor, resistors, LEDs (including a huge 10mm RGB LED), two push switches, a phototransistor, buzzer and variable resistor.


[www.kitronik.co.uk/5334](http://www.kitronik.co.uk/5334)

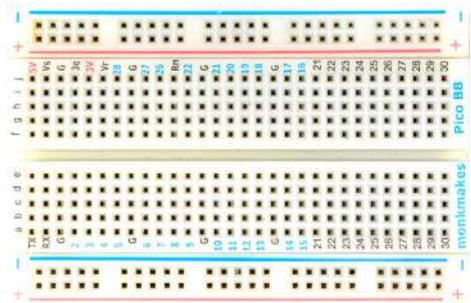

Pico not included (Sold separately)

| Description  | Code | 1+     |
|--|------|--------|
| Monk Makes Electronics Kit 1 for Pico (lite edition) | 5334 | £12.50 |

## MONK MAKES BREADBOARD FOR PICO

**NEW!**

The Monk Makes solderless breadboard labelled for the Raspberry Pi Pico is the perfect prototyping solution for the Pico. Each of the Picos pins is labelled on the breadboard. When used in conjunction with a Pico with pin headers already attached, finding the right hole for your jumper lead couldn't be more simple.


[www.kitronik.co.uk/2492](http://www.kitronik.co.uk/2492)


Pico not included (Sold separately)

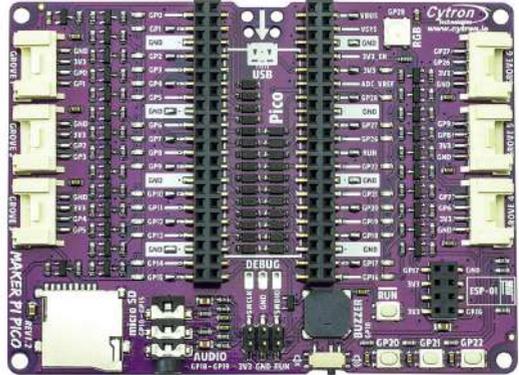
| Description                    | Code | 1+    |
|--------------------------------|------|-------|
| Monk Makes Breadboard for Pico | 2492 | £3.33 |

## MAKER PI PICO BASE: SIMPLIFYING PI PICO FOR BEGINNERS

The Cytron Maker Pi Pico Base is an all-in-one accessory for the Raspberry Pi Pico, offering a feature-rich learning environment for beginners and beyond!

The Maker Pi Pico Base has been specifically designed to simplify learning and using the Raspberry Pi Pico. It gives the user easy access to all of the features of the Pico.

It adds Grove connections, an RGB LED, buzzer, micro SD card connector, audio jack, input buttons and I/O indicator LEDs.



[www.kitronik.co.uk/46172](http://www.kitronik.co.uk/46172)



Find compatible Grove modules on Page 102

| Description  | Code  | 1+    | 10+   |
|--|-------|-------|-------|
| Maker Pi Pico Base : Simplifying Pi Pico for Beginners (excl Pico) | 46172 | £8.50 | £8.25 |

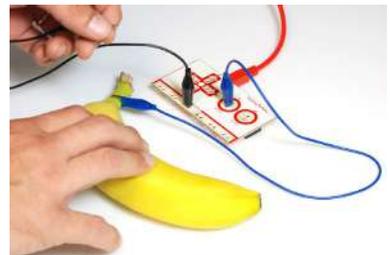
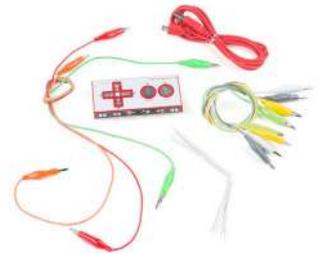
## MAKEY MAKEY CLASSIC

This is the new version of the Makey Makey. You may be the greatest living banana pianist, but how will you ever know if you don't make yourself a banana piano? Using the Makey Makey you can make anything into a key just by connecting a few alligator clips. The Makey Makey Classic by JoyLabz is an invention kit that tricks your computer into thinking that almost anything is a keyboard. This allows you to hook up all kinds of fun things as an input. For example, play Mario with a Play-Doh keyboard or piano with fruit!

Using the Makey Makey with a banana. >



[www.kitronik.co.uk/46121](http://www.kitronik.co.uk/46121)



| Description                    | Code  | 1+     |
|--------------------------------|-------|--------|
| Makey Makey Classic by JoyLabz | 46121 | £40.00 |

## EDISON – EDUCATIONAL ROBOT

Edison is a programmable robot designed to be a complete STEM teaching resource for coding and robotics education for students from 4 to 16 years of age. The Edison robot is a powerful, engaging tool for teaching children computational thinking and computer programming in a hands-on way. With more built-in sensors (line, light and sound) than any robot in its class, as well as lights, sounds and autonomous behaviour capabilities, Edison makes true robotics education accessible to students of all ages. Free teaching resources are available to download from our website.



[www.kitronik.co.uk/46125](http://www.kitronik.co.uk/46125)

| Description       | Code  | 1+     | 10+    |
|-------------------|-------|--------|--------|
| Edison V2.0 Robot | 46125 | £34.99 | £32.50 |

## EDCREATE

A 5-in-1 expansion pack construction system. Designed to work with the Edison robot. Consisting of 115 interlocking building blocks, pegs, gears, and other parts, the individual EdCreate pieces are designed with studs and holes which are compatible with Edison robots and any other LEGO brick compatible building system.



< Example robot made with this kit.



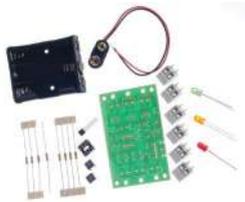
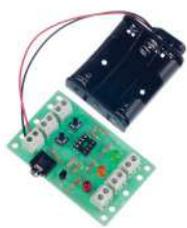
Edison robot sold separately.



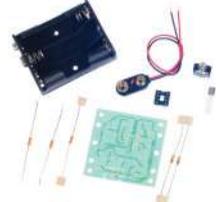
[www.kitronik.co.uk/46127](http://www.kitronik.co.uk/46127)

| Description                        | Code  | 1+     | 10+    |
|------------------------------------|-------|--------|--------|
| EdCreate Edison robot creators kit | 46127 | £19.00 | £18.50 |

## 8 PIN PIC DEVELOPMENT AND PROJECT BOARDS



^ Development board



^ Project board

These boards have been designed to complement each other. The larger development board (once built) can be used as a starting point for a project by attaching inputs and outputs to the board via the terminal blocks. The PIC software can then be developed and the complete solution tested without using a soldering iron. Once students are happy with their design they can transfer the design to the project board, soldering their chosen peripherals into the board. The development board can be reused on future projects. You can connect any device to the outputs of the board including LEDs, sounders, motors etc. The teaching notes for this project include a number of possible projects including: a decision maker, traffic light, timer, quiz buzzer, alarm and a timed fan. Both boards are supplied in kit form.

**i** Processor not included (see 3726, below).

**b** Requires 3x AA batteries, available separately.

| Description                               | Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|---|------|-------|-------|-------|-------|-------|
| PIC 8 pin development board (2 in, 3 out) | 2126 | £5.15 | £3.95 | £3.45 | £3.28 | £3.11 |
| PIC 8 pin project board (2 in, 3 out)     | 2127 | £2.80 | £2.05 | £1.85 | £1.76 | £1.67 |

\* Price shown includes bulk buy discount



### PICAXE® DOWNLOAD CABLE

The PICAXE Programming Editor software downloads programs into the PICAXE chip via a very low cost USB download cable. No programmer is required – you simply place the matching 'stereo' socket on the project board and then download the program directly into the PICAXE chip.

| Description        | Code | 1+     | 5+     |
|--------------------|------|--------|--------|
| USB download cable | 3716 | £16.50 | £16.00 |



### PICAXE-08M2 CHIP

| IC Size | Memory (bytes) | Parallel Tasks | Code | 1+    | 25+   | 100+  |
|---------|----------------|----------------|------|-------|-------|-------|
| 08      | 2048           | 04             | 3726 | £2.25 | £2.10 | £1.90 |



## PROGRAMMABLE MUSIC BOX KIT



A simple programming task allows the student to play a tune of their choice when the switch is activated. The kit is compatible with most educational PICs & software. Programming is via a 3.5mm jack interface.

**i** Processor not included  
(see [PICAXE-08M2 Chip](#) on Page 112).

Requires 3x AA batteries.

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2122 | £4.50 | £3.25 | £2.95 | £2.80 | £2.66 |

\* Price shown includes bulk buy discount



## CYBERPET KIT

This project enables students to create an electronic pet with LED 'eyes' and a piezo sounder 'voice'. Will react to light (miniature LDR) and touch (push switch). Includes PICAXE-08M2LE chip. **Pack of 5.**

| Code | 1+     | 5+     |
|------|--------|--------|
| 3723 | £21.00 | £20.00 |



## DICE KIT

This classic project uses the PIC microcontroller to create an electronic dice. Students can choose to activate the dice by a switch or by adding an LDR. Includes PICAXE-08M2LE chip. **Pack of 5.**

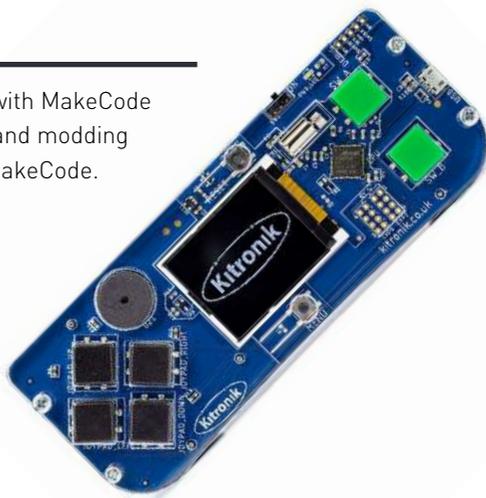
| Code | 1+     | 5+     |
|------|--------|--------|
| 3725 | £21.00 | £20.00 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## ARCADE FOR MAKECODE ARCADE

ARCADE is a programmable gamepad for use with MakeCode Arcade. Develop your coding skills by creating and modding games with Blocks, Python and JavaScript in MakeCode.

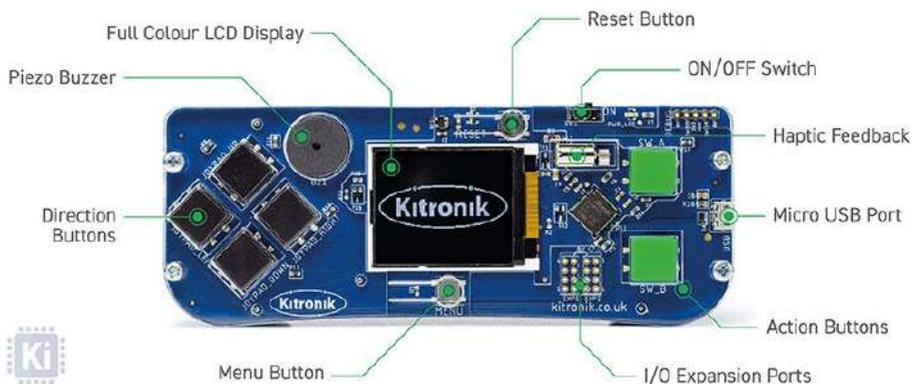
The Kitronik ARCADE has been specifically designed to offer the perfect platform for running games. It's packed full of features and has been ergonomically designed for comfort and ease of use. It features a full colour LCD wide viewing angle screen, a piezo sounder for audio feedback, a vibration motor for haptic feedback, 6 gamer input buttons, a menu button, a reset button and an on/off switch. Everything you need for the perfect gaming experience. It also features a software volume control, a USB programming port, and 2 expansion ports for the expert level users.



 Requires 3x AA batteries, available separately.

 [www.kitronik.co.uk/5311](http://www.kitronik.co.uk/5311)

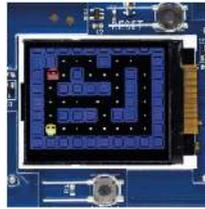
| Description                | Code | 1+     | 10+    |
|----------------------------|------|--------|--------|
| ARCADE for MakeCode Arcade | 5311 | £30.00 | £28.00 |



**PLEASE NOTE:** The ARCADE is a self-contained system – just add batteries!



**Made For MakeCode**  
The Kitronik ARCADE is a handheld gamepad for use with the Microsoft MakeCode Arcade editor.



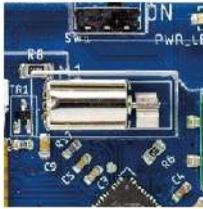
**Full Colour LCD**  
It features a full colour 1.77" LCD wide viewing angle screen.



**Programmable Buttons**  
6 gamer input buttons, a menu button, a reset button and an on/off switch.



**Learn To Code**  
Follow the extensive tutorials or create games from the ground up.



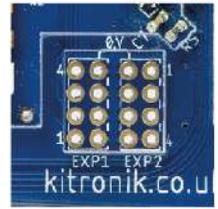
**Haptic Feedback**  
Powerful vibration motor for haptic feedback



**Buzzer**  
Loud piezo sounder for audio feedback



**Protective Case**  
Strong plastic case for increased durability.



**Expandable I/O**  
Add additional inputs and outputs for enhanced gaming.

## ARCADE CLASS PACK

The classroom pack comes with 10 Arcade gamepads, 10 USB noodle cables, a pack of 40 batteries, and is packaged in a reusable Grattell's tray.



| Code | 1+      |
|------|---------|
| 5318 | £285.00 |

## ARCADE RETAIL PACK

The retail pack comes with a USB noodle cable, batteries, quick start booklet and is packaged in a reusable transparent plastic container.



| Code | 1+     | 10+    |
|------|--------|--------|
| 5319 | £34.50 | £30.50 |

# 04

# OTHER KITS & MODULES

## SECTION CONTENTS

|                             |           |
|-----------------------------|-----------|
| Clocks & accessories        | 117 - 119 |
| Fizzbit                     | 120       |
| Solar projects              | 121       |
| Breakouts, boards & sensors | 122       |
| Buggy project kits          | 123       |
| Gratnell's trays            | 124       |
| IsoSketch                   | 125       |

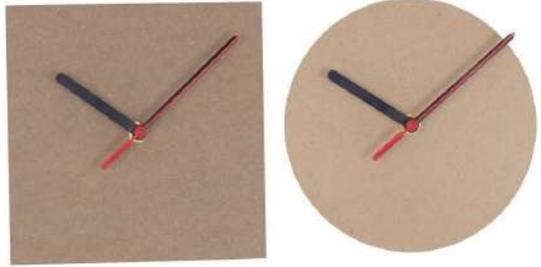


## 'BUILD A CLOCK' KIT

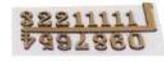
This kit contains all the parts required to build 20 complete clocks.

### Kit contents:

- 20 clock movements.
- 10 square clock faces.
- 10 round clock faces.
- 20 Arabic gilt numerals.



[www.kitronik.co.uk/2804-a](http://www.kitronik.co.uk/2804-a)



| Description                 | Code   | 1+     | 10+    |
|-----------------------------|--------|--------|--------|
| Build a clock kit - 20 pack | 2804-A | £50.00 | £47.00 |

## CLOCK FACES

Get your clock project off to a perfect start. Made from 4mm MDF, these pre-cut and drilled clock faces fit perfectly with our quartz clock movement. They are supplied in packs of 10 and available in a square or round design.

### ROUND CLOCK FACES



### SQUARE CLOCK FACES



| Description          | Code    | 1+    |
|----------------------|---------|-------|
| 10 round clock faces | 2802-10 | £8.00 |

| Description           | Code    | 1+    |
|-----------------------|---------|-------|
| 10 square clock faces | 2803-10 | £8.00 |

## QUARTZ CLOCK MOVEMENT

A precision quartz clock movement, supplied complete with hour, minute and second hands. The unit is easy to mount with a centre fixing and includes the fixing hardware.

Supplied as single, in a box of 20, in a tray of 100, or in a box of 500.

 The clock will typically run for two years off a single AA size battery (available separately).

 Size 55 x 55 x 15mm.  
Max panel thickness 12mm.  
Hand dimensions: Hour 62mm; Minute 90mm; Second 90mm (measured from centre of clock movement).



From  
75p each!

| Description                 | Code     | 1+      |
|-----------------------------|----------|---------|
| Single clock movement       | 2801-01  | £1.55   |
| Box of 20 clock movements   | 2801-20  | £21.00  |
| Tray of 100 clock movements | 2801-100 | £85.00  |
| Box of 500 clock movements  | 2801-500 | £375.00 |



## ARABIC GILT NUMERALS

A set of 20mm self adhesive Arabic gilt numerals.

| Description          | Code | 1+    | 10+   |
|----------------------|------|-------|-------|
| Arabic gilt numerals | 2809 | £0.80 | £0.70 |

## LOOKING FOR INSPIRATION?

See how we made a concrete clock:

 [www.kitronik.co.uk/concrete](http://www.kitronik.co.uk/concrete)



## SHORT SPINDLE QUARTZ CLOCK MECHANISM

This version of our popular clock movements is the same in every way as our normal version, but has a shorter spindle making it ideal for use with thinner clock face materials.

Supplied as single, in a box of 20, in a tray of 100, or in a box of 500.



The clock will typically run for over one year off a single AA size battery (available separately).



Size 55 x 55 x 15mm.  
Max panel thickness 3mm.  
Hand dimensions: Hour 62mm;  
Minute 90mm; Second 90mm  
(measured from centre of clock movement).



[www.kitronik.co.uk/2810](http://www.kitronik.co.uk/2810)



^ The short spindle (left) in comparison with the regular spindle (right, product 2801).

| Description                                | Code     | 1+      |
|--|----------|---------|
| Single short spindle clock mechanism       | 2810-01  | £1.55   |
| Box of 20 short spindle clock mechanisms   | 2810-20  | £21.00  |
| Tray of 100 short spindle clock mechanisms | 2810-100 | £85.00  |
| Box of 500 short spindle clock mechanisms  | 2810-500 | £375.00 |

## SHORT HANDS FOR QUARTZ CLOCK MECHANISM

These Short Hands for Quartz Clock Movements expand your options when designing clock faces and are compatible with all of the Quartz Clock Movements we stock.



Hour 49.3mm; Minute 54.5mm; Second 57.3mm.



[www.kitronik.co.uk/2814](http://www.kitronik.co.uk/2814)



| Description                           | Code | 1+    | 10+   | 100+  |
|---------------------------------------|------|-------|-------|-------|
| Short hands for Quartz Clock Movement | 2814 | £0.49 | £0.39 | £0.29 |

## MAKE YOUR MINI-FIGURES MOVE WITH FIZZBIT



- 1 Create your 3D printed or paper robot.
- 2 Plug the Fizzbit module directly into a computer or USB power supply.
- 3 Your Fizzbot can now battle, race and dance around!

## FIZZBIT MODULE



The Fizzbit is a way to bring movement and excitement to mini-figures of your own invention. It is a small module containing a vibration motor, super capacitor and USB socket, which can plug directly into a computer or USB power supply (no batteries required). You slot your Fizzbit into a mini-figure (made from paper or 3D printed), turning it into a Fizzbot. Fizzbots can battle, race and dance around.

For a full set of templates for creating Fizzbots, see:

 [www.thecraftyrobot.net](http://www.thecraftyrobot.net)

The resources offer a great starting point and allow you to make Fizzbots using a 3D printer, a paper cutting machine or, simply, cut out by hand.



### List of resources:

- Sumo wrestler: 123D file, Design Spark Mechanical File
- Fizzbot base (Sphere with mounting details): 123D file, Design Spark Mechanical File.
- Paper Fizzbot base (used to make tiger and sequin figure): DXF file, PDF.
- Dragon and Unicorn: DXF files.
- Cowboy and horse: PDF.



The Fizzbit module 

| Description    | Code | 1+    | 10+   | 100+  |
|----------------|------|-------|-------|-------|
| Fizzbit module | 5201 | £4.50 | £3.40 | £3.20 |

## SOLAR POWERED BUGGY



Thinking of ways to introduce solar energy to your students? With this Solar Powered Buggy, learning how to harness the sun's energy to produce power is fun and hands-on.

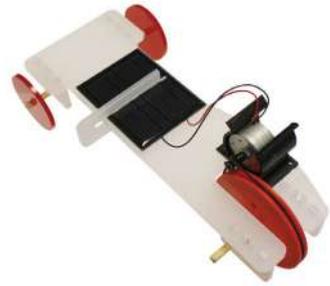
The buggy is simple to construct and all of the required parts are included. The scope of the project can be extended by getting your students to redesign aspects of the buggy and evaluate the impact that this has on its performance.

**i** This kit requires assembly, including soldering.

**e** [www.kitronik.co.uk/2153](http://www.kitronik.co.uk/2153)

| Code | 1+    | 5+    | 50+   | 200+* | 300+* |
|------|-------|-------|-------|-------|-------|
| 2153 | £8.65 | £8.15 | £7.75 | £7.36 | £6.98 |

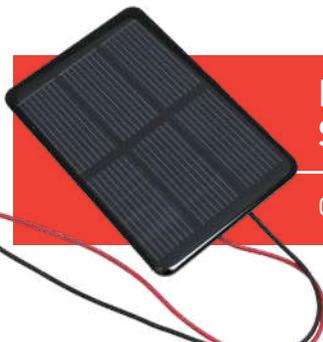
\* Price shown includes bulk buy discount



## SOLAR EDUCATIONAL KIT

The solar kit is a perfect introduction to solar energy. The kit includes a 400mA solar module, low inertia motor, connecting lead, impeller and discs plus a booklet.

| Description           | Code | 1+    |
|-----------------------|------|-------|
| Solar educational kit | 3601 | £7.25 |



**LOOKING FOR SOLAR CELLS?**

Check out **page 153**.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## MICRO USB TO 5V BREAKOUT

This compact Micro USB Breakout Board offers an easy way of connecting circuits to the 5V power lines that a USB connection supplies. The output (5V and Gnd) connections are two large solderable pads on the PCB. This board is ideal for replacing batteries in a variety of circuits such as our Mono Amp kit. It is compatible with Micro USB chargers supplied with most mobile phones and tablets.



[www.kitronik.co.uk/5109](http://www.kitronik.co.uk/5109)

| Code | 1+    | 10+   |
|------|-------|-------|
| 5109 | £0.95 | £0.75 |

## ULTRASONIC RANGE FINDER HC-SR04 5V

Use sonar to add distance sensing to your robotics, electronics, or Arduino project. This module has been specially selected to work on the voltage range typically found with the Arduino range of products. You can easily add this to your project and even use with the micro:bit if you use a separate 5V power supply.

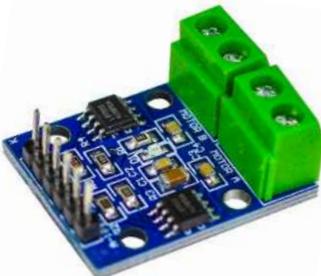


[www.kitronik.co.uk/46130](http://www.kitronik.co.uk/46130)

| Code  | 1+    |
|-------|-------|
| 46130 | £2.00 |

## TWO CHANNEL MOTOR DRIVER BOARD

A simple board for driving two brushed DC motors or a single stepper motor. Power input is 2.5V-12V DC and the H-bridge input controls are on B-1A, B-1B and A-1A, A-1B.



[www.kitronik.co.uk/46134](http://www.kitronik.co.uk/46134)

| Code  | 1+    |
|-------|-------|
| 46134 | £0.85 |

## PIR MOTION SENSOR

This is a simple-to-use motion sensor. Power it up and wait 1-2 seconds for the sensor to get a snapshot of the still room. If anything moves after that period, the 'alarm' pin will go low. Voltage, 5V to 12V. This kit is pre-assembled.

**i** Open collector output requires pull up resistor.



[www.kitronik.co.uk/4633](http://www.kitronik.co.uk/4633)

| Code | 1+    |
|------|-------|
| 4633 | £9.30 |

## RESISTIVE TOUCH KEYPAD

This is designed to make the resistive touch capabilities of the micro:bit much easier to access and use. It breaks out pins 0, 1 and 2 from the micro:bit to circular pads. They are ideally sized for fingertips to make a connection across the particular pin and GND. Connect to a micro:bit by using jumper cables from the installed pin header.

[www.kitronik.co.uk/5637](http://www.kitronik.co.uk/5637)



| Description            | Code | 1+    | 10+   | 50+   |
|------------------------|------|-------|-------|-------|
| Resistive touch keypad | 5637 | £3.45 | £2.95 | £2.80 |

## LINE TRACKING MOUSE KIT

 KS  
4

A complete kit of electronic and mechanical parts to build a line following robot. Three photo sensors are used as the robots 'eyes' to allow it to follow a black line, drawn on paper or taped to the floor. Full assembly instructions included.

Requires 4x AA batteries, available separately.

[www.kitronik.co.uk/2190](http://www.kitronik.co.uk/2190)



| Description             | Code | 1+     | 5+     |
|-------------------------|------|--------|--------|
| Line Tracking Mouse kit | 2190 | £19.00 | £18.70 |

## SOUND REVERSING CAR KIT

 KS  
4

This car moves forward until it senses noise from a clap or physical contact with an object, when it reverses whilst turning. Full assembly instructions included.

Requires 2x AA batteries, available separately.

[www.kitronik.co.uk/2192](http://www.kitronik.co.uk/2192)



| Description             | Code | 1+     | 5+     |
|-------------------------|------|--------|--------|
| Sound Reversing Car kit | 2192 | £10.45 | £10.15 |

## GRATNELL'S STORAGE TRAYS

Gratnell's are international award-winning trays, BSI tested and passed for heavy educational use, making them the ideal storage solution for the classroom. The trays will fit standard school furniture.

We carry several different depths of tray, as well as a lid that will fit all sizes.



 [www.kitronik.co.uk/trays](http://www.kitronik.co.uk/trays)

| Description  | Code | 1+    |
|--|------|-------|
| Gratnell's Storage Tray F1 Shallow Tray - Kitronik Green     | 2056 | £3.10 |
| Gratnell's Storage Tray F2 Deep Tray - Kitronik Green        | 2057 | £4.40 |
| Gratnell's Storage Tray F25 Extra Deep Tray - Kitronik Green | 2058 | £6.05 |
| Gratnell's Storage Tray F3 Jumbo Tray - Kitronik Green       | 2059 | £7.80 |
| Gratnell's Clip-on Lid for F Range - Translucent             | 2060 | £2.10 |

## WE STOCK A LARGE RANGE OF PLYWOOD SHEETS

Plywood is ideal for Model Making, Joinery and Carpentry applications.

See **page 223** for more details.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## ISOSKETCH DRAWING TOOL

3D drawing skills can be a major barrier to learning in creative subjects like Product Design, Resistant Materials and Graphic Products. The whole point of D&T should be that your imagination is the limit - not your talent.

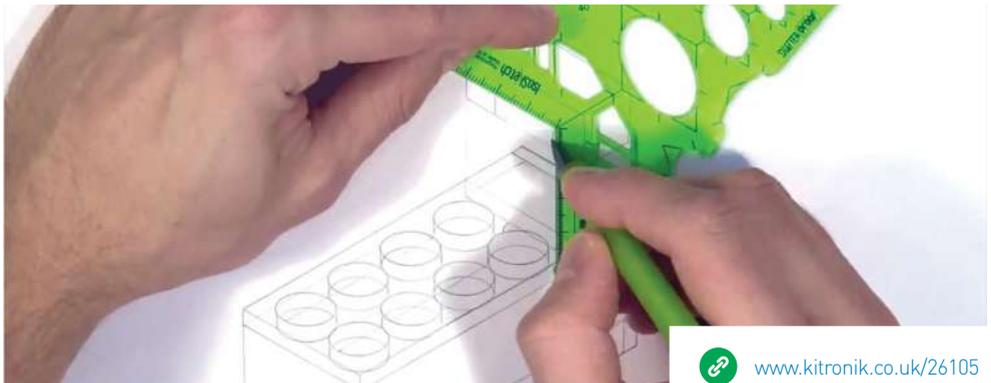
The **IsoSketch 3D Drawing Tool** is a precision design stencil, designed to help create perfect isometric drawings in seconds, or intricate masterpieces with a bit more patience. The IsoSketch is ideally suited for use in schools, thanks to its compact design and the ten individual design tools it incorporates.

Made from Shatterproof Styralux, the IsoSketch is a rugged, durable tool which can withstand a significant degree of pressure without damage.

Available as an individual item or in a class pack of 30, the IsoSketch is especially suited to beginners looking for a simple solution to drawing great quality diagrams and plans.



- ✓ See the IsoSketch in use at [www.thedrawingtoolcompany.com/videos](http://www.thedrawingtoolcompany.com/videos)


[www.kitronik.co.uk/26105](http://www.kitronik.co.uk/26105)

| Description                                       | Code     | 1+     |
|---|----------|--------|
| IsoSketch 3D Drawing Tool Single Pack             | 26105-01 | £4.08  |
| IsoSketch 3D Drawing Tool Class Pack – pack of 30 | 26105-30 | £60.00 |



# **ELECTRO FASHION®**

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THE **EASY** WAY TO ADD ELECTRONICS  
TO YOUR TEXTILES PROJECT

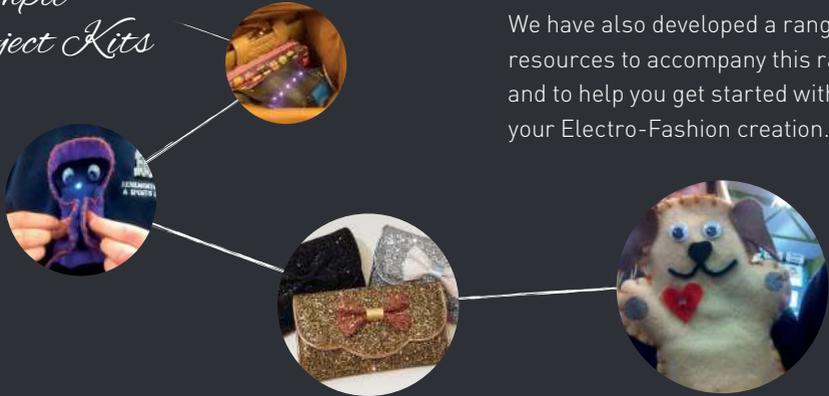
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For more details on our e-textiles products, visit:



[www.kitronik.co.uk/electrofashion](http://www.kitronik.co.uk/electrofashion)

*Example  
Project Kits*



The Electro-Fashion range includes kits and also individual parts (for your own unique creations). The kit range includes simple sewable LED kits and a programmable 'Igloo' board.

Our large selection of individual Electro-Fashion components includes sewable push, tilt, slide switches. There is also a selection of battery holders (to provide power) and easy to use sewable LEDs.

We have also developed a range of resources to accompany this range and to help you get started with your Electro-Fashion creation.





## CONDUCTIVE THREAD 45M BOBBIN

Conductive thread is perfect for hand sewing and can be used on the bottom bobbin of a sewing machine (this will require the thread to be wound on to the smaller bottom bobbin first). Reels of conductive thread are 50 yards / 45m. Conductive thread can be used like conventional sewing thread, however it electrically conducts allowing electronics to be integrated into textiles.

| Description                    | Code | 1+    | 4+    |
|--------------------------------|------|-------|-------|
| Conductive thread - 45m bobbin | 2722 | £8.00 | £6.90 |



## CONDUCTIVE THREAD 250M BOBBIN

Working on a big project and need a lot of thread? Then this longer 250m bobbin of conductive thread will be just what you need. It is exactly the same thread that goes on the 45m bobbin, just more of it.

| Description              | Code | 1+     |
|--------------------------|------|--------|
| Conductive thread - 250m | 2744 | £37.50 |



## CONDUCTIVE THREAD 2M / 6M T-SHIRT

We now offer 2m or 6m of conductive thread (approximately), which is bound around a funky pink Electro-Fashion t-shirt emblem that can be used as a key ring!

| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| 2m (approx) Conductive thread | 2724 | £1.90 |
| 6m (approx) Conductive thread | 2727 | £2.80 |



## CONDUCTIVE HOOK & LOOP (VELCRO) STRIP

This is a 10cm long strip of conductive hook & loop (Velcro). This conductive strip is perfect for E-Textile projects where you need to make a complete circuit by simply forming a connection between the hook and loop pieces. The strip is 2.5cm wide by 10cm long. The surface resistance for both the hook and the loop is 1Ω per centimetre.

| Description                                   | Code | 1+    |
|---|------|-------|
| Conductive hook & loop strip - 2.5 cm x 10 cm | 2740 | £5.00 |

## CONDUCTIVE FABRIC



Conductive fabric can be used to make a soft switch. Only a small amount is required per switch, so this sheet goes a long way. This is a conductive knit fabric for use in e-textiles, similar to a nylon ripstop material. It is highly conductive with a low surface resistivity.

| Description                               | Code | 1+     |
|---|------|--------|
| Conductive fabric - ripstop - 305 x 330mm | 2716 | £9.50  |
| Conductive fabric - stretch - 305 x 330mm | 2717 | £20.00 |

## MAGNETIC BUTTONS – PACK OF 5



These magnetic buttons / fasteners make great switches when used in conjunction with our conductive thread. You can simply sew conductive thread to each half of the fastener using the two mounting holes on each contact to make a simple on / off switch. Pack of 5.

| Description                  | Code | 1+    |
|------------------------------|------|-------|
| Magnetic Buttons - pack of 5 | 2755 | £4.00 |

## CONDUCTIVE FABRIC WITH CONDUCTIVE ADHESIVE

**NEW!**

These Nylon conductive squares, measuring 10cm x 10cm, have a conductive adhesive backing making them the perfect choice for a wide variety of e-textiles/cosplay applications. More flexible than copper tape, more versatile than standard conductive fabrics, and they can be cut exactly to shape and stuck straight to your project/costume.


[www.kitronik.co.uk/2770](http://www.kitronik.co.uk/2770)

| Description                                | Code | 1+    |
|--|------|-------|
| Conductive Fabric with Conductive Adhesive | 2770 | £6.00 |



^ Project Example

## SEWABLE LED KITS

Kits are packed ready for student use and include a coin cell holder, a coin cell, 2m of conductive thread and either two flashing LEDs or one colour changing LED. They allow lighting effects to be added to textiles designs without soldering.

| Description                     | Code | 1+    | 10+   |
|---------------------------------|------|-------|-------|
| Flashing blue sewable LED kit   | 2702 | £3.00 | £2.50 |
| Flashing green sewable LED kit  | 2703 | £3.00 | £2.50 |
| Flashing red sewable LED kit    | 2704 | £3.00 | £2.50 |
| Flashing yellow sewable LED kit | 2705 | £3.00 | £2.50 |
| Colour changing sewable LED kit | 2706 | £3.10 | £2.60 |

## ELECTRO-FASHION - 60 STUDENT BULK PACKS

These bulk packs offer great value for teaching larger groups of students.

See  [www.kitronik.co.uk/2707](http://www.kitronik.co.uk/2707) and [/2764](http://www.kitronik.co.uk/2764) for full pack contents.

| Description                         | Code | 1+      |
|-------------------------------------|------|---------|
| 60 Student Bulk Pack – Regular LEDs | 2707 | £95.00  |
| 60 Student Bulk Pack – Flat LEDs    | 2764 | £125.00 |



^ Project Example  
(requires extra LEDs)

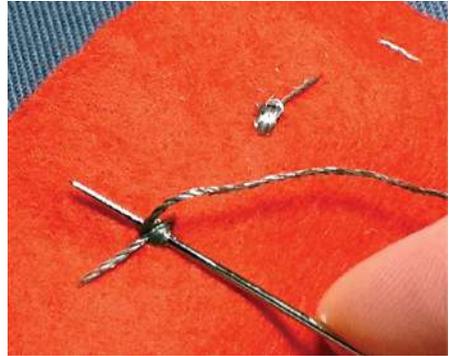
## ELECTRO-FASHION KITS WITH FLAT LEDs

These kits are ready-packed with all of the parts needed for students to make a simple E-Textiles circuit. The kit includes two flat LEDs that are marked up with + and – markings, making them smaller and easier to use than LEDs with leads. As well as the two flat LEDs, the kit also includes a 2m t-shirt of conductive thread, a sewable coin cell holder and coin cell.

| Description                          | Code | 1+    | 10+   |
|--------------------------------------|------|-------|-------|
| Sewable LED kit with blue flat LEDs  | 2735 | £3.80 | £3.10 |
| Sewable LED kit with green flat LEDs | 2736 | £3.80 | £3.10 |
| Sewable LED kit with red flat LEDs   | 2737 | £3.80 | £3.10 |
| Sewable LED kit with white flat LEDs | 2738 | £3.80 | £3.10 |

## BEGINNER GUIDES FOR E-TEXTILES

To make it easier to find the e-textiles guidance you need we have restructured the resources on the Kitronik website. As well as splitting the instructions out into difficulty levels, a new e-textiles basics section has been created. The basics page covers everything from what e-textiles is, the parts in the Electro-Fashion range, choosing a needle, basic circuits, fault finding as well as answers to all your frequently asked questions. All in all there are 14 guides to cover the basics and are perfect to get teachers and students started with e-textiles.



[www.kitronik.co.uk/e-textiles-basics](http://www.kitronik.co.uk/e-textiles-basics)

## TUTORIALS

In addition to supplying the fundamental parts of any E-Textile project, we also offer a selection of online E-Textiles tutorials and resources with step-by-step guidance and cutting pattern templates.

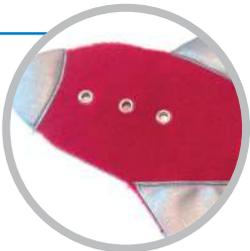
### EXAMPLE TUTORIAL: HOW TO MAKE A ROCKET TORCH KEY RING

- 1**

**MATERIALS & COMPONENTS NEEDED FOR THIS PROJECT**


- 2**

**PREPARE THE ROCKET BODY**


- 3**

**CREATE THE E-TEXTILE CIRCUIT**


- 4**

**STITCH THE ROCKET LAYERS TOGETHER, LIGHTLY STUFF, & PUSH TO ACTIVATE!**



For more tutorials, visit [www.kitronik.co.uk/etextiletutorials](http://www.kitronik.co.uk/etextiletutorials)

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## PROJECT EXAMPLES - ELECTRO-FASHION SEWABLE LEDs



◀ Examples of conductive fabric used on the hands of puppets. When these are touched together, the circuit is completed and the LED lights up.



Read more about Annabelle at [www.kitronik.co.uk/etextiles-handbag](http://www.kitronik.co.uk/etextiles-handbag)

^ Annabelle Greaves of Hello Violaceous specialises in handcrafted bags, purses and accessories. Some of her stunning designs feature E-Textile electronics and show just how effective E-Textiles can be.

Spice up your mask with our Electro-Fashion > range! We've made ours a smile, but you can make any shape you want! Why not show some love with a heart shape, or make an adorable cat nose and whiskers?



[www.kitronik.co.uk/LEDmask](http://www.kitronik.co.uk/LEDmask)



## ELECTRO-FASHION FLASHER CONTROLLER, LEDs & THREAD

This unit offers a simple way of adding 'flashing' white LEDs to a textiles project. The unit is programmed with a number of flashing patterns that are selected by a push button on the main PCB. Pressing this button cycles through the following patterns: all LEDs constantly on, slow flash (all on, all off), fast flash (each in turn), and turned off. The device features auto off, which turns the unit off after 30 minutes to preserve battery life. Depending upon flash pattern the battery lasts for approximately two days of constant use.

This kit is supplied 'pre-built' so requires no soldering. Each kit comprises three small PCBs. The largest of the three PCBs holds an LED plus the control electronics, battery and a push button. On both of the remaining PCBs there is an LED, which are connected to the main board with conductive thread.

 Includes approximately 2m of conductive thread.

 Dimensions: L34 x W20 x H9mm.

 Includes a CR2032 battery.

| Description                 | Code | 1+    | 10+   |
|-----------------------------|------|-------|-------|
| Flasher controller and LEDs | 2719 | £5.75 | £4.95 |



## ELECTRO-FASHION - DISCOVERY PACK

This pack is a great way of getting started with E-Textiles. The pack contains a selection of the popular products from our 'Electro-Fashion' range.

- |  |   |
|--|---|
| 1 x White sewable PCB LED - pack of 10.                  | 1 x Electro-Fashion sewable coin cell holder; |
| 1 x Sewable coin cell holder with built in power switch. | 2m thread and colour changing LED.            |
| 1 x Sewable push switch.                                 | 3 x Electro-Fashion sewable coin cell holder. |
| 1 x Sewable slide switch.                                | 1 x Small conductive thread bobbin (6m).      |
| 1 x Sewable tilt switch.                                 | 1 x Blue sewable PCB LED - pack of 10.        |
|  | 1 x Coin cell, CR2032, strip of 5.            |

| Description                      | Code | 1+     |
|----------------------------------|------|--------|
| Electro-Fashion - Discovery Pack | 2715 | £22.50 |

## SEWABLE COIN CELL HOLDER

The specially designed coin cell holder has large connection points for the conductive thread and are marked to show the battery polarity. It is available on its own, to incorporate into your own designs.



 Accepts CR2032 battery.

 Dimensions: L34 x W20 x H4.5mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2701 | £1.15 | £0.90 |

## MINIATURE COIN CELL HOLDER

This specially designed coin cell holder has large connection points for the conductive thread. These are clearly marked to show the battery polarity.



 Accepts CR1220 battery.

 Dimensions: L22 x W12.5 x H4mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2718 | £1.10 | £0.85 |

## LATCHING SWITCH COIN CELL HOLDER

This coin cell holder has large connection points for the conductive thread, clearly marked to show the battery polarity. The unit incorporates a latching push button switch meaning you press once to turn the power on, and again to turn the power off.



 Accepts CR2032 battery.

 Dimensions: L44 x W20 x H4.5mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2752 | £2.20 | £2.00 |

## SWITCHED COIN CELL HOLDER

This specially designed coin cell holder has large connection points for the conductive thread. These are clearly marked to show the battery polarity. The unit also has a small power switch so that you can turn the power on and off.



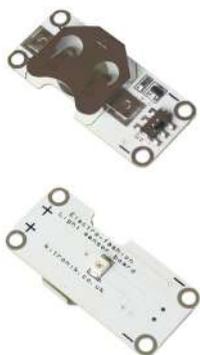
 Accepts CR2032 battery.

 Dimensions: L44 x W20 x H4.5mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2711 | £1.85 | £1.55 |

## ELECTRO-FASHION LIGHT SENSOR

This board allows LEDs to be turned on automatically when it is dark. On one side of the board is the coin cell holder, which takes a CR2032 coin cell as well as a small on / off slide switch. On the other side of the board is the light sensor. The design means that it is possible to cut a small hole in the front of the product for the light sensor to detect the light level, whilst also being able to get to the back of the board to change the battery and turn the board off. When turned off any connected LEDs will be off. When turned on the connected LEDs will be off in daylight but come on in the dark.



| Description                    | Code | 1+    | 10+   |
|--------------------------------|------|-------|-------|
| Electro-Fashion - Light sensor | 2721 | £3.50 | £2.40 |



## LITHIUM 3V COIN CELLS

| Description                  | Code | 1+    | 10+   |
|------------------------------|------|-------|-------|
| 3V CR2032 - 200mA/h - 5 pack | 2262 | £1.25 | £1.05 |
| 3V CR1220 - 40mA/h - 5 pack  | 2269 | £1.25 | £1.05 |

## NEEDLE SET

This set of sewing needles is a must-have when stitching together your next e-textile project. Each envelope contains three 48mm, 1.23mm thick needles and two smaller 39mm, 0.67mm thick needles. The eye of each size needle is large enough to easily thread with our conductive thread.



| Code | 1+    |
|------|-------|
| 2741 | £1.35 |

## SEWABLE BUZZER

This sewable buzzer allows you to add an alarm or alert sound to your textiles project. The buzzer has a built in drive circuit, so you just need to connect power (3V) to the buzzer for it to sound.



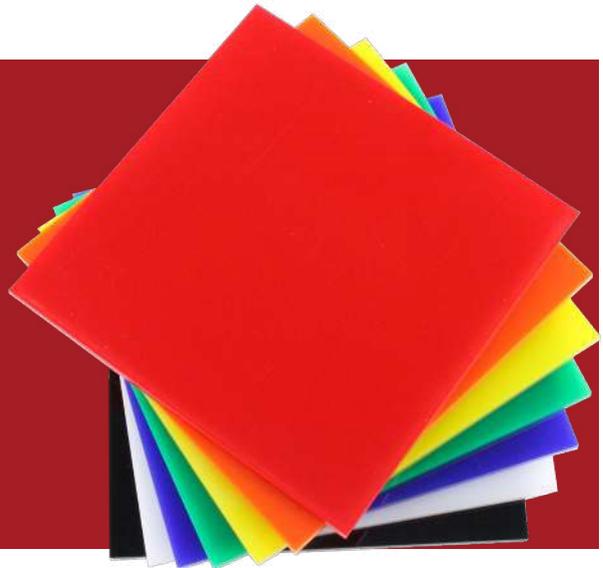
 Dimensions: L24.5 x W10.5 x H6.3mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2745 | £2.50 | £2.00 |

CRAFT IN AFFORDABLE  
STYLE WITH OUR

# VALUE ACRYLIC

See **page 196**  
for more details.



**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## SEWABLE PUSH SWITCH

This push button switch will allow LEDs to light whilst the switch is pressed.



 Dimensions: L18 x W8.5 x H6mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2708 | £0.95 | £0.75 |

## SEWABLE TILT SWITCH

When horizontal this switch is off. When tilted 10° from horizontal the tilt switch is on.

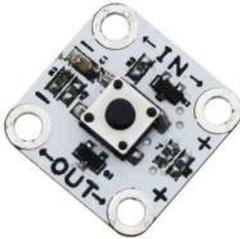


 Dimensions: L26 x W6.5 x H7mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2710 | £1.60 | £1.30 |

## LATCHING SWITCH

This switch latches meaning you press once to turn the power on, and again to turn the power off. Simply connect the 'input' side to a power board and the 'output' side to the parts you want to turn on. Pressing the button toggles the power state on the output side.

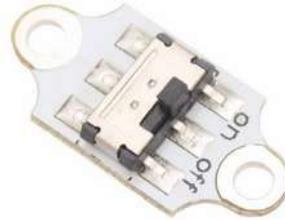


 Dimensions: L19.5 x W19.5 x H4mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2753 | £1.60 | £1.20 |

## SEWABLE SLIDE SWITCH

This two position miniature slide switch allows LEDs to be turned on or off in textiles projects.



 Dimensions: L18 x W8.5 x H4mm.

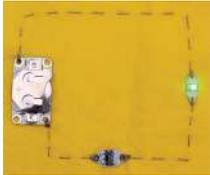
| Code | 1+    | 10+   |
|------|-------|-------|
| 2709 | £1.00 | £0.80 |



## ELECTRO-FASHION MAGNETIC SWITCH & MAGNET

This magnetic switch can turn on LEDs when the magnet is placed near the switch.

| Description              | Code | 1+    | 10+   |
|--------------------------|------|-------|-------|
| Magnetic switch & magnet | 2763 | £3.00 | £2.50 |
| Replacement magnet       | 3431 | £0.50 |       |



**Dimensions:**  
L15 x W6.5 x H3mm

## SEWABLE PCB LEDs

These ultra slim, pre-mounted LEDs are illuminated continuously. They have connections to which the conductive thread can be connected. These are clearly marked with '+' and '-' to indicate which is the positive and which is the negative connection. The PCBs are double sided making the thread connection very reliable. They are supplied on a small panel and the LEDs can easily be removed by snapping them out.

| Description         | Colour         | Code             | 1+    | 10+   |
|---------------------|----------------|------------------|-------|-------|
| LED board - 10 pack | White          | 2714             | £4.60 | £3.60 |
| LED board - 10 pack | Red            | 2712             | £4.60 | £3.60 |
| LED board - 10 pack | Green          | 2723             | £4.60 | £3.60 |
| LED board - 10 pack | Blue           | 2713             | £4.60 | £3.60 |
| LED board - 10 pack | Sakura (lilac) | 2726             | £5.20 | £4.10 |
| LED board - 10 pack | Orange         | <b>NEW!</b> 2765 | £5.00 | £3.90 |
| LED board - 10 pack | Yellow         | <b>NEW!</b> 2766 | £5.00 | £3.90 |



**Dimensions:**  
L18 x W7.5mm

## THROUGH HOLE LED HOLDERS

These sewable LED holders make it easy to add a compatible 5mm through hole LED to an e-textiles project. The boards have two large sewable pads to which the conductive thread can be connected and these are clearly labelled with '+' and '-' symbols. Just slide the legs of the chosen LED through the holes in the middle of the board (making sure it matches the outline on the PCB) and solder into place. Supplied in a panel of 10. Requires soldering.

| Description                        | Code | 1+    | 10+   |
|------------------------------------|------|-------|-------|
| Through hole LED holders - 10 pack | 2746 | £3.25 | £2.65 |

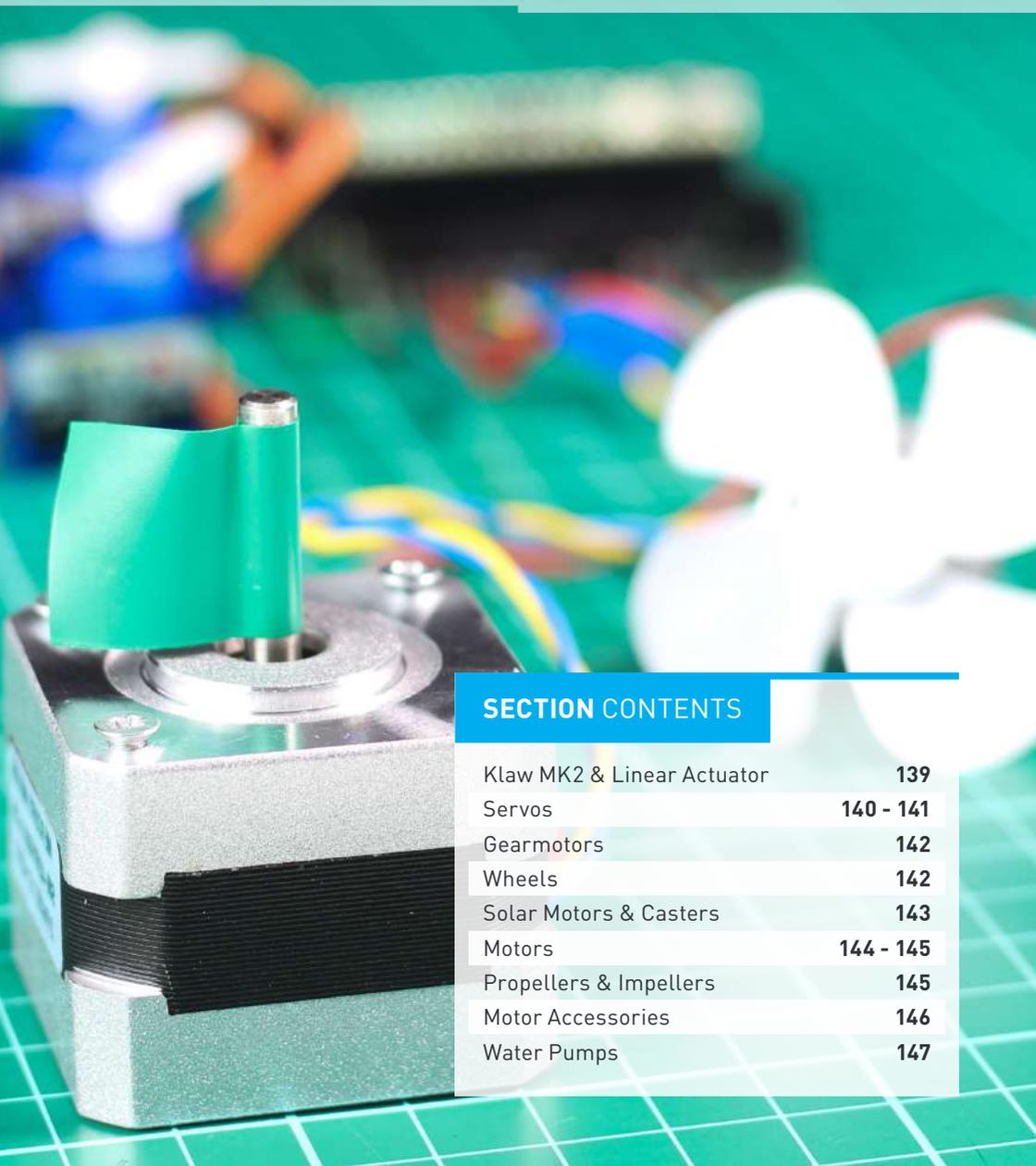
## 5MM FLASHING LED



These flashing LEDs can be used with the Electro-Fashion coin cell power boards. 5mm flashing LEDs in white, red, green, blue and yellow. The LEDs flash at around 2Hz when connected to a 5V supply.

| Colour | Code | 1+    | 10+   | 100+  | 1000+ |
|--------|------|-------|-------|-------|-------|
| White  | 3592 | £0.26 | £0.16 | £0.14 | £0.13 |
| Red    | 3538 | £0.24 | £0.14 | £0.12 | £0.10 |
| Green  | 3539 | £0.24 | £0.14 | £0.12 | £0.10 |
| Blue   | 3545 | £0.24 | £0.14 | £0.13 | £0.11 |
| Yellow | 3540 | £0.24 | £0.14 | £0.12 | £0.10 |

# 06 ROBOTICS



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## POWER UP YOUR PROJECTS WITH OUR ROBOTICS BOARDS

**Compact Robotics Board**  
for BBC micro:bit - Page 90

**Robotics Board**  
for Raspberry Pi Pico - Page 108



## KITRONIK KLAW MK2 ROBOTIC GRIPPER KIT

The Kitronik 'Klaw' gripper is a great addition to any robotics project. It is controlled by a low voltage servo which is included. The servo is used to open and close the Klaw. At the rear of the unit are mounting points allowing it to be bolted to other items, such as buggies or robotic arms. Supply voltage: 3V to 6V. **Supplied as a set of parts that require simple assembly.**



 This new version is compatible with the :MOVE mini (see page 74).

 [www.kitronik.co.uk/25104](http://www.kitronik.co.uk/25104)

| Description                           | Code  | 1+    | 5+    |
|---------------------------------------|-------|-------|-------|
| Kitronik Klaw MK2 Robotic Gripper Kit | 25104 | £5.70 | £5.20 |

## LINEAR ACTUATOR KIT

This linear actuator converts the circular movement of a 180 degree servo (supplied) into motion in a straight line, one way and then the other. It can be mounted to a project to provide either horizontal or vertical movement.

 [www.kitronik.co.uk/2595](http://www.kitronik.co.uk/2595)



| Description         | Code | 1+    | 5+    |
|---------------------|------|-------|-------|
| Linear Actuator Kit | 2595 | £5.00 | £4.50 |

## FS90R 360 DEGREE CONTINUOUS ROTATION SERVO

A 360 degree continuous rotation servo. Instead of going to a specified angle, this servo can rotate fully in a forward and reverse direction.



[www.kitronik.co.uk/2589](http://www.kitronik.co.uk/2589)

| Code | 1+    |
|------|-------|
| 2589 | £3.85 |

## MINI 180 DEGREE SERVO

This mini 180 Degree 5V servo with accessories is great value, and is ideal for micro-controller systems like the BBC micro:bit, Arduino, Raspberry Pi and PICAXE.



Length: 22mm.  
Width: 12mm.  
Height: 31mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2565 | £2.65 | £2.50 |

## SPOKE WHEELS FOR SERVO MOTOR

If you have a robotics project or buggy featuring FS90R style micro continuous rotation servos, these 5 spoke injection moulded ABS wheels are the perfect wheel for the job! They fit directly onto the servo and can be screwed to the servo with the fixings that come with the servo.

[www.kitronik.co.uk/2593-SV](http://www.kitronik.co.uk/2593-SV)



| Description                                    | Code    | 1+    | 10+   | 50+   |
|--|---------|-------|-------|-------|
| Pair of 5 spoke wheels for Servo Motor - White | 2593-SV | £2.05 | £1.85 | £1.65 |

## STANDARD S3003 STYLE SERVO

This servo is designed for use in remote controlled cars & boats. Supplied with a range of arms and disks.

Typical Voltage: 4.8V.  
Operating Current: 100mA.



Length: 40mm;  
Width: 20mm; Height: 37.3mm.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2542 | £8.24 | £6.50 |

## LARGE 180 DEGREE SERVO

An excellent value 180 degree rotation servo that can be used as a direct replacement for the Towerpro MG996R servo. It has metal gearing and double bearing for accuracy and wear resistance.

Operating Voltage: 4.8V to 7.2V.



Length: 40mm; Width: 19mm; Height: 43mm.

| Code | 1+    |
|------|-------|
| 2575 | £5.00 |

## CLIPPABLE SERVO

This clippable servo has had the standard pin header replaced with super useful crocodile clips. 180-degree rotation and operates between 4.8V and 6V.



[www.kitronik.co.uk/25105](http://www.kitronik.co.uk/25105)

| Code  | 1+    | 10+   | 100+  |
|-------|-------|-------|-------|
| 25105 | £4.95 | £4.45 | £3.95 |

## CLIPPABLE 360 DEGREE SERVO

This clippable servo has had the standard pin header replaced with super useful crocodile clips. This allows it to be used in projects that feature other clippable connection points.



[www.kitronik.co.uk/25111](http://www.kitronik.co.uk/25111)

| Code  | 1+    | 10+   | 100+  |
|-------|-------|-------|-------|
| 25111 | £4.95 | £4.45 | £3.95 |

## MINI 180 DEGREE METAL GEAR SERVO MG90S

The MG90S Servo is small and lightweight but boasts a high output power for its size. This is largely due to its metal gear and bearing. This makes it much more durable than other types of small servo that feature plastic gears and bearings. It operates between 4.8V to 6V and only weights 13.4g.



[www.kitronik.co.uk/2592](http://www.kitronik.co.uk/2592)

| Description                            | Code | 1+    |
|--|------|-------|
| Mini 180 Degree Metal Gear Servo MG90S | 2592 | £3.40 |

## SERVO TO CROCODILE CLIP ADAPTER CABLE

Connect a servo using clip wires with this servo to crocodile clip adapter cable. It has 100mm colour coded cables terminating in a male servo connector.



[www.kitronik.co.uk/4178](http://www.kitronik.co.uk/4178)

| Code | 1+    | 10+   |
|------|-------|-------|
| 4178 | £1.05 | £0.95 |

## SOLENOID - 5V

This solenoid operates at 5V making it ideal for embedded projects. It has a throw of about 6mm and two M2 mounting holes on the body.



[Dimensions: 20x12x11mm.](#)

| Code | 1+    |
|------|-------|
| 2540 | £5.45 |

## RIGHT ANGLE GEARED TT HOBBY MOTOR

This is a 90RPM geared hobby motor. It runs off a voltage of between 3V & 6V & can be used with our matching tyre, allowing you to build your own buggy.

**i** **Operating voltage:** 3V – 6V (4.5V nominal). **No load current:** 200mA (approx).  
**Speed:** 90RPM (approx). **Stall current:** 1.25A (approx).

 [www.kitronik.co.uk/2547](http://www.kitronik.co.uk/2547)



| Description                        | Code | 1+    | 10+   | 100+  |
|------------------------------------|------|-------|-------|-------|
| Right Angled Geared TT Hobby Motor | 2547 | £1.90 | £1.85 | £1.60 |

## SOLDERLESS TT MOTOR ADAPTER BOARD

This easy to fit (no soldering) board allows clip wires to be easily connected to a TT motor (sold separately).

 [www.kitronik.co.uk/2594](http://www.kitronik.co.uk/2594)



| Description                       | Code | 1+    | 10+   |
|-----------------------------------|------|-------|-------|
| Solderless TT Motor Adapter Board | 2594 | £0.85 | £0.65 |

## SPOKE WHEELS & RIGHT ANGLED TT MOTORS

If you have a robotics project or buggy featuring geared hobby motors, these 5 spoke injection moulded ABS wheels are the perfect wheel for the job! They fit directly onto the motor and can be screwed to the motor.

The ABS used is very lightweight and has excellent mechanical qualities. As such, the wheels are extremely durable and very difficult to break. As they are made from ABS, the wheels can be fully recycled.

The wheels are supplied with rubber o-rings that when pushed onto the wheel act as tyres. When fitted, the o-rings will not come off accidentally. A concerted effort is required to remove them. **Supplied as a pair.**

 [www.kitronik.co.uk/2593-TT](http://www.kitronik.co.uk/2593-TT)

 [www.kitronik.co.uk/25100](http://www.kitronik.co.uk/25100)



| Description   | Code    | 1+    | 10+   | 50+   | 100+  |
|---|---------|-------|-------|-------|-------|
| Pair of 5 spoke wheels for TT motor - yellow                    | 2593-TT | £2.05 | £1.85 | £1.65 |       |
| Pair of right angle geared TT motors with pair of yellow wheels | 25100   | £5.75 | £5.25 |       | £4.75 |



## LOW INERTIA SOLAR MOTOR - 1760 RPM

Low inertia motor ideal for low power applications such as solar. Voltage range 0.7 to 5.0V [2V nominal].

Length: 12.8mm. Diameter: 24.4mm. Shaft: 6mm, diameter: 2mm.

| Description                        | Code | 1+    | 10+   | 50+   |
|------------------------------------|------|-------|-------|-------|
| Low Inertia Solar Motor - 1760 RPM | 2506 | £1.45 | £1.30 | £1.25 |



## LOW INERTIA SOLAR MOTOR - 1820 RPM

This is a low inertia solar DC mini motor. Operating voltage: 0.5V to 3V. Starting speed: 1000 RPM. Starting current: 30mA at 0.5V.

Length: 12.8mm. Diameter: 24.4mm. Shaft: 10.5mm, diameter: 2mm.

| Description                        | Code | 1+    | 10+   | 100+  |
|------------------------------------|------|-------|-------|-------|
| Low Inertia Solar Motor - 1820 RPM | 2546 | £1.25 | £1.15 | £1.05 |



## STEEL BALL CASTER

The Steel Ball Caster has a ball diameter of 16mm. This omni-directional metal ball caster is an ideal choice for the rear wheel of a robot design.

Diameter: 16mm; Length: 49mm; Width: 32mm; Height: 21mm.

| Description              | Code | 1+    | 10+   |
|--------------------------|------|-------|-------|
| Steel Ball Caster - 16mm | 2566 | £1.10 | £1.05 |



## STEPPER MOTOR WITH CABLE

This is a simple, but very powerful stepper motor with a 4-wire cable attached. Step size: 1.8°.

Shaft diameter: 5mm. Dimensions: 41x41x33mm.

| Description              | Code | 1+     |
|--------------------------|------|--------|
| Stepper Motor with Cable | 2536 | £15.00 |

WANT TO INTRODUCE YOUR STUDENTS TO SOLAR ENERGY? THEN CHECK OUT THE...

# SOLAR POWERED BUGGY KIT!



HEAD TO PAGE 121

## MINI LOW TORQUE FLAT DC MOTOR

MM10 3V DC motor, operating voltage 1.5V to 4.5V. The two flat sides enable easy mounting onto a panel or PCB. Typical speed 12400 RPM, typical current 1.5A.

- Length: 25mm.
- Diameter: 20mm.
- Shaft: 8.1mm, diameter: 2mm.



| Code | 1+    | 10+   |
|------|-------|-------|
| 2543 | £0.45 | £0.35 |

## LOW TORQUE DC MOTOR

MM12 3V DC motor, operating voltage 1.5V to 3.0V. Mountable using x2 M3 bolts. Typical speed 11500 RPM, typical current 1.05A. Pack of 10.

- Length: 25mm.
- Diameter: 21mm.
- Shaft: 8.1mm, diameter: 2mm.



| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| Low torque DC motor - 10 pack | 2510 | £3.25 |

## MEDIUM TORQUE DC MOTOR

MM18 3V DC motor, operating voltage 1.5V to 4.5V. Mountable using x2 M3 bolts. Typical speed 5000 RPM, typical current 350 mA. Pack of 10.

- Length: 27mm.
- Diameter: 24mm.
- Shaft: 8.6mm, diameter: 2mm.



| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| Med torque DC motor - 10 pack | 2501 | £5.35 |

## HIGH TORQUE DC MOTOR

MM28 3V DC motor, operating voltage 1.5V to 6V. Mountable using x2 M3 bolts. Typical speed 7930 RPM, typical current 760 mA. Pack of 10.

- Length: 30.5mm.
- Diameter: 24mm.
- Shaft: 10mm, diameter: 2mm.



| Description                    | Code | 1+    |
|--------------------------------|------|-------|
| High torque DC motor - 10 pack | 2507 | £6.30 |

## VERY HIGH TORQUE MOTOR

HS540 7V DC motor, operating voltage 6V to 12V. Mountable using x2 M3 bolts. Typical speed 19500 RPM, typical current 4.7A.

- Length: 50mm.
- Diameter: 35.8mm.
- Shaft: 8.5mm, diameter: 3.2mm.



| Code | 1+    |
|------|-------|
| 2557 | £3.15 |

## UNIVERSAL MOTOR CLIP

These clips are used to mount motors. The clip has an adapter to hold small flat sided motors and self adhesive backing. Pack of 10.



| Description                  | Code | 1+    |
|------------------------------|------|-------|
| Plastic motor clip - 10 pack | 2505 | £2.35 |

## MINIATURE 3V VIBRATING MOTOR

Can be used as silent alert, within robotics & control stick feedback. Pre-wired with red & black leads 90mm

Operating range: 1.7-3.6VDC.

Rated current: 75mA.

Diameter: 6mm.  
Length: 12mm.



| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 2541 | £1.55 | £1.25 | £1.15 |

## MINIATURE 3V SHAFTLESS VIBRATING MOTOR

This shaftless 3V vibratory motor is perfect for non-audible indicators. Includes a 3M adhesive backing and reinforced connection wires.

Diameter: 10mm.  
Length: 3.4mm.



| Code | 1+    |
|------|-------|
| 4675 | £2.49 |

## GEARBOX

Fits motor 2507 (not included). The base includes holes for fixing. The assembly also includes a precision worm, gearwheel and output shaft.

Shaft: 100mm, diameter: 4mm.



| Code | 1+    | 10+   | 50+   |
|------|-------|-------|-------|
| 2508 | £2.50 | £2.30 | £2.15 |

## PROPELLERS

These 2 and 3 blade propellers can be used with any motor with a 2mm shaft. 2 blade diameter, 150mm approx. 3 blade diameter, 115mm approx.



| Description             | Code | 1+    |
|-------------------------|------|-------|
| 150mm red two blade     | 2525 | £0.50 |
| 115mm black three blade | 2526 | £0.70 |

## 90MM BLUE THREE BLADE PROPELLER

This large propeller can be used with any motor with a 2mm shaft. The diameter is approximately 90mm.



| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 2545 | £0.60 | £0.45 | £0.40 |

## MINIATURE IMPELLER BLADE

This four blade impeller is 51mm in diameter and fits on to any motor with a 2mm shaft.



| Code | 1+    | 10+   | 100+  |
|------|-------|-------|-------|
| 2544 | £0.45 | £0.35 | £0.30 |



## MINIATURE PULLEYS

A range of pulleys, all manufactured in the UK. The 8mm pulley has a 2mm push fit mounting and is suitable for use with MM10-MM28 and solar motors. All of the other pulleys have a 4mm push fit mounting which is suitable for use with wooden dowel (code 2533). All pulleys are 5mm wide. All supplied in packs of 10.

| Description                         | Code | 1+    |
|-------------------------------------|------|-------|
| 2mm pulley, 8mm diameter - 10 pack  | 2512 | £1.45 |
| 4mm pulley, 10mm diameter - 10 pack | 2527 | £2.30 |
| 4mm pulley, 20mm diameter - 10 pack | 2528 | £2.80 |
| 4mm pulley, 30mm diameter - 10 pack | 2529 | £4.75 |
| 4mm pulley, 40mm diameter - 10 pack | 2530 | £5.70 |
| 4mm pulley, 60mm diameter - 10 pack | 2531 | £6.80 |

## RUBBER TYRES



These tyres fit on to our 40mm and 60mm diameter pulleys, turning them into wheels. Pack of 5.

| Description        | Code | 1+    |
|--------------------|------|-------|
| Tyre 40mm - 5 pack | 2534 | £1.10 |
| Tyre 60mm - 5 pack | 2535 | £1.35 |

## 4MM WOODEN DOWEL

4mm wooden dowel, 600mm in length.



| Description          | Code    | 1+    |
|----------------------|---------|-------|
| 4mm dowel - 10 pack  | 2533-10 | £0.90 |
| 4mm dowel - 100 pack | 2533    | £6.20 |

## MDF WHEELS



40mm and 50mm diameter MDF laser cut wheels with a 4mm mounting hole. Pack of 100.

| Description               | Code | 1+    |
|---------------------------|------|-------|
| MDF Wheel 40mm - 100 pack | 2561 | £6.95 |
| MDF Wheel 50mm - 100 pack | 2562 | £8.50 |

## AXLE MOUNTING BRACKET

Axle bracket which is perfect for using with 4mm wooden dowel. Max diameter: 5mm. Pack of 100.



| Description                      | Code | 1+    |
|----------------------------------|------|-------|
| Axle mounting bracket - 100 pack | 2532 | £8.75 |

## 3V VERTICAL SUBMERSIBLE WATER PUMP

This 3V vertical submersible low power water pump is an ideal solution for creating a small indoor water feature or as part of a plant watering system. At the heart of the pump is a 3V DC motor that runs quietly and only draws approximately 100mA.

The pump needs priming before use and should be kept fully submerged during use as it will only pump water not air.



[www.kitronik.co.uk/25110](http://www.kitronik.co.uk/25110)

| Description                        | Code  | 1+    | 10+   | 50+   |
|------------------------------------|-------|-------|-------|-------|
| 3V Vertical Submersible Water Pump | 25110 | £2.05 | £1.85 | £1.75 |

## WATER PUMP 6V-12V WITH 1M SILICONE TUBE

This diaphragm pump is the perfect choice for any project that requires water to be moved from one place to another. The pump is supplied with 1m of Silicone hose that can be cut as required. The hose provides a good seal and will not leak.

**Extra tubing is available in 5m lengths.**



[www.kitronik.co.uk/2567](http://www.kitronik.co.uk/2567)  
or /2569



The pump requires between 6 - 12V DC and between 0.5 - 0.7A.

| Description                             | Code | 1+     |
|---|------|--------|
| Water Pump 6V-12V with 1m Silicone Tube | 2567 | £10.00 |
| 5m Silicone Tube                        | 2569 | £5.00  |

# 07 COMPONENTS

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## BATTERY CAGES WITH LEADS

Battery cage with 150mm colour coded flying leads. Available in 1 x AA, 2 x AA and 3 x AA versions.

| Description                      | Code    | 1+    |
|----------------------------------|---------|-------|
| 1 x AA cage with leads - 25 pack | 2231-25 | £3.25 |
| 2 x AA cage with leads - 25 pack | 2232-25 | £4.40 |
| 3 x AA cage with leads - 10 pack | 2221-10 | £3.95 |



## BATTERY HOLDERS WITH PCB MOUNT

PCB mount battery holders. Available in 1 x AA, 2 x AA and N Size versions.

| Description                            | Code    | 1+    |
|--|---------|-------|
| 1 x AA holder with PCB mount - 10 pack | 2263    | £2.15 |
| 2 x AA holder with PCB mount - 25 pack | 2251-25 | £6.00 |
| N Size holder with PCB mount - 25 pack | 2253-25 | £5.00 |



## BATTERY HOLDERS WITH CLIP

Battery cage with PP3 clip connection. Available in 2 x AA, 3 x AA and 4 x AA versions.

| Description                     | Code    | 1+    |
|---------------------------------|---------|-------|
| 2 x AA cage with clip - 25 pack | 2233-25 | £5.50 |
| 3 x AA cage with clip - 25 pack | 2234-25 | £7.50 |
| 4 x AA cage with clip - 25 pack | 2235-25 | £6.20 |



## BATTERY HOLDERS WITH SWITCH

Battery cage with lid and switch. Available in 2 x AA, 3 x AA and 4 x AA versions. Connection is via flying leads.

| Description                             | Code | 1+    | 10+   | 100+  |
|---|------|-------|-------|-------|
| 2 x AA battery cage with leads & switch | 2258 | £0.70 | £0.65 | £0.60 |
| 3 x AA battery cage with leads & switch | 2239 | £0.70 | £0.60 | £0.50 |
| 4 x AA battery cage with leads & switch | 2222 | £0.80 | £0.70 | £0.65 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## PP3 CLIP LEADS

PP3 clip leads are available in heavy duty (top) and standard styles (bottom).



| Description                         | Code    | 1+    |
|-------------------------------------|---------|-------|
| Heavy duty PP3 clip leads - 25 pack | 2238-25 | £3.70 |
| Standard PP3 clip leads - 25 pack   | 2257-25 | £2.35 |

## COIN CELL HOLDER, PCB MOUNT



Takes a CR2032 battery.



| Description                | Code    | 1+    |
|----------------------------|---------|-------|
| Coin cell holder - 10 pack | 2252-10 | £3.25 |

## LITHIUM COIN CELLS



| Description  | Code | 1+    | 10+   |
|--|------|-------|-------|
| 3V CR2032 GP (branded) coin cell, 200mA/h - 5 pack | 2250 | £2.55 | £2.25 |
| 3V CR2032 Economy coin cell, 200mA/h - 5 pack      | 2262 | £1.25 | £1.05 |
| 3V CR2016 Economy coin cell, 75mA/h - 5 pack       | 2264 | £1.25 | £1.05 |
| 3V CR1220 coin cell, 40mA/h - 5 pack               | 2269 | £1.25 | £1.05 |

## BATTERY CAGES WITH JST CONNECTOR

Battery cage with JST connector, supplied with 145mm colour coded leads. Available in 2 x AAA and 3 x AAA versions.



| Description                             | Code | 1+    | 10+   | 100+  |
|---|------|-------|-------|-------|
| 2 x AAA battery cage with JST connector | 2271 | £0.90 | £0.75 | £0.65 |
| 3 x AAA battery cage with JST connector | 2273 | £0.95 | £0.85 | £0.75 |

## BATTERY BOX WITH SWITCH & JST CONNECTOR

Battery box featuring a cover, an on/off switch and JST connector. Available in 2 x AAA and 3 x AAA versions.



| Description                           | Code | 1+    | 10+   | 100+  |
|---------------------------------------|------|-------|-------|-------|
| 2 x AAA battery box with switch & JST | 2225 | £0.95 | £0.85 | £0.75 |
| 3 x AAA battery box with switch & JST | 2224 | £1.30 | £1.20 | £0.95 |



## BATTERY HOLDER WITH SWITCH & LED HOLDER

This switched battery holder comes complete with a terminal connector on the end of the wires. It is perfect for connecting LEDs without the need for soldering.

| Description  | Code | 1+    | 10+   | 100+  |
|--|------|-------|-------|-------|
| 2 x AA battery cage with leads, switch & connector | 2268 | £0.75 | £0.70 | £0.65 |
| 3 x AA battery box with switch & connector         | 2267 | £0.80 | £0.70 | £0.65 |



## ZINC CHLORIDE BATTERIES

| Description           | Code    | 1+    | 5+    |
|-----------------------|---------|-------|-------|
| PP3 battery - 10 pack | 2211-10 | £5.20 | £4.90 |
| AAA battery - 40 pack | 2246-40 | £7.80 |       |
| AA battery - 40 pack  | 2201-40 | £7.95 | £7.65 |



## PRO-ELEC ALKALINE BATTERIES

| Description                             | Code    | 1+    | 5+    |
|---|---------|-------|-------|
| Pro-Elec alkaline AA battery - 40 pack  | 2207-40 | £8.95 | £8.25 |
| Pro-Elec alkaline AAA battery - 40 pack | 2214-40 | £8.65 | £7.95 |



## ALKALINE BATTERIES

| Description                            | Code    | 1+     | 5+     |
|--|---------|--------|--------|
| GP alkaline AA size battery - 40 pack  | 2254-40 | £14.00 | £13.50 |
| GP alkaline PP3 size battery - 10 pack | 2255-10 | £16.00 | £15.50 |



## N SIZE

| Description        | Code | 1+    | 10+   |
|--------------------|------|-------|-------|
| N type 12V battery | 2245 | £0.45 | £0.40 |



## RECHARGEABLE BATTERIES

| Description                           | Code | 1+    | 10+   |
|---------------------------------------|------|-------|-------|
| AA Ni-MH Rechargeable Battery 1300mAh | 2278 | £1.15 | £0.95 |



## FOUR WAY BATTERY CHARGER AA OR AAA

This 4 way battery charger is a compact plug-in charger that allows you to charge any standard AA or AAA Ni-Cd/Ni-MH rechargeable batteries. It can charge 2 or 4 batteries at a time.

| Description                        | Code | 1+    | 10+   |
|------------------------------------|------|-------|-------|
| Four Way Battery Charger AA or AAA | 2228 | £4.45 | £3.95 |



## POLYMER LITHIUM ION BATTERIES

These are very slim, extremely light-weight batteries based on the Polymer Lithium (LiPo) Ion chemistry. Battery output 3.7V (nominal).

**i** 4652: Capacity 1000mAh. 2209: Capacity 400mAh. 2227: Capacity 250mAh.

| Description                                | Code | 1+    | 10+   | 100+  |
|--|------|-------|-------|-------|
| Polymer Lithium Ion Battery (3.7V, 1Ah)    | 4652 | £4.25 | £3.85 | £3.50 |
| Polymer Lithium Ion Battery (3.7V, 400mAh) | 2209 | £3.50 | £3.15 | £2.85 |
| Polymer Lithium Ion Battery (3.7V, 250mAh) | 2227 | £3.40 | £3.05 | £2.75 |



## SparkFun 5V/1A LIPO CHARGER/BOOSTER

This SparkFun 5V/1A LiPo Charger/Booster generates a 5V 1A supply from a 3.7V Lithium Polymer battery. The board also charges the LiPo battery (connected using a JST connector). Input power should be from a 5V micro USB PSU and the output is two solder pads.

| Description                         | Code  | 1+     |
|-------------------------------------|-------|--------|
| SparkFun 5V/1A LiPo Charger/Booster | 46135 | £15.30 |



## BASIC - LIPO MICRO-USB CHARGER

A stripped down basic charger designed to charge 3.7V LiPo cells at 500mA per hour. Designed to work with single-cell Li-Ion and Li-Polymer batteries.

| Description                    | Code | 1+    |
|--------------------------------|------|-------|
| Basic - LiPo Micro-USB Charger | 2218 | £9.00 |



## 40mA POLYCRYSTALLINE SOLAR CELL

A 5V high-efficiency polysilicon Solar Cell with PET laminated finish, giving it a waterproof cell face. Size 50mm x 30mm.

| Description                          | Code | 1+    | 10+   | 100+  |
|--------------------------------------|------|-------|-------|-------|
| 5.0V 40mA polycrystalline solar cell | 3609 | £1.80 | £1.65 | £1.55 |



## 50mA POLYCRYSTALLINE SOLAR CELL

This crystalline solar cell is finished with epoxy resin making it waterproof. Connection is via solder pads on the back of the cell.

**Voltage:** 3V. **Current:** 50mA (max).

**Dimensions:** L60 x W60 x H3mm

| Description                          | Code | 1+    | 10+   | 100+  |
|--------------------------------------|------|-------|-------|-------|
| 3.0V 50mA polycrystalline solar cell | 3603 | £1.70 | £1.50 | £1.35 |



## 100mA POLYCRYSTALLINE SOLAR CELL

A 3V 100mA (max) crystalline solar cell, finished with epoxy resin making it waterproof.

**Dimensions:** L60 x W48 x H3mm

| Description                           | Code | 1+    | 10+   | 100+  |
|---------------------------------------|------|-------|-------|-------|
| 3.0V 100mA polycrystalline solar cell | 3604 | £2.15 | £2.05 | £1.70 |



## POLYCRYSTALLINE SOLAR CELLS

A high efficiency polycrystalline photovoltaic solar cell. Resin encapsulated (IP54), fitted with 200mm red and black connecting wires. Can be connected in series or parallel to obtain the desired voltage or output current.

**Dimensions:** 3606 – L60 x W90 x H3mm  
 3607 – L120 x W62 x H3mm  
 3608 – L110 x W56 x H3mm



| Description                           | Code | 1+    |
|---------------------------------------|------|-------|
| 1.5V 400mA polycrystalline solar cell | 3606 | £3.85 |
| 2.0V 400mA polycrystalline solar cell | 3607 | £5.15 |
| 5.0V 130mA polycrystalline solar cell | 3608 | £4.75 |



## 5V 200mA POLYCRYSTALLINE SOLAR CELL

This is a high quality 5V 200mA (max) Polycrystalline solar cell measuring just 110mm x 110mm. They are the ideal choice for projects requiring a decent output current in a small form factor. The front face has a waterproofed PET laminated surface making it suitable for outdoor use. The rear face has solder pads for connecting to your circuit.

**Dimensions:** L110 x W110 x H3mm

| Description                           | Code | 1+    | 10+   |
|---------------------------------------|------|-------|-------|
| 5.0V 200mA polycrystalline Solar Cell | 3605 | £5.60 | £4.95 |



## USB (5V) WALL POWER SUPPLY

A 5V, 1A mains power supply. It has a USB socket on the top and is perfect for using with our USB power lead.

| Description           | Code | 1+    | 10+   |
|-----------------------|------|-------|-------|
| USB wall power supply | 2261 | £5.20 | £5.00 |



## 5V 1A MICRO USB UK MAINS WALL POWER SUPPLY

This 5V 5W power supply is ideal for our 5V projects or a mobile phone. It has a 1.8M output cable and terminates in a Micro USB connector.

| Description                                | Code | 1+    | 10+   |
|--|------|-------|-------|
| 5V 1A Micro USB UK mains wall power supply | 2208 | £4.49 | £4.25 |



## 12V 500mA UK MAINS WALL POWER SUPPLY

A high quality 500mA (6 watt) UK plug top switch mode power supply. The lead length is approximately 1.4m long with a 2.1mm DC jack on the end.

| Description                          | Code | 1+    | 10+   |
|--------------------------------------|------|-------|-------|
| 12V 500mA UK mains wall power supply | 2260 | £4.50 | £4.20 |



## 12V 2A UK MAINS WALL POWER SUPPLY

A high quality 2A (24 watt) UK plug top switch mode power supply. The lead length is approximately 1.4m long with a 2.1mm DC jack on the end.

| Description                       | Code | 1+    | 10+   |
|-----------------------------------|------|-------|-------|
| 12V 2A UK mains wall power supply | 2266 | £6.85 | £6.55 |



Unsure about the power supply you need?  
Ask our technical support team

0845 8380781  
support@kitronik.co.uk

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.



### STEREO PCB SOCKET

A 3.5mm stereo jack socket with switched contacts and a plastic body. **Pack of 25.**

| Code | 1+    |
|------|-------|
| 4102 | £2.30 |



### PANEL MOUNT DC POWER SOCKET

Panel mounting DC power sockets with switched contacts, for 2.1mm DC plugs. Solder terminals. 3A 12VDC rated. **Pack of 10.**

| Code | 1+    |
|------|-------|
| 4107 | £2.50 |



### PANEL MOUNT DC POWER SOCKET

A neat panel mounting, 2.1mm DC power socket with un-switched contacts. Single hole fixing (panel cut-out 8mm). 3A 12VDC rated.

| Code | 1+    |
|------|-------|
| 4108 | £0.75 |



### PANEL MOUNT DC POWER SOCKET

This 2.1mm DC jack socket can be easily chassis mounted using a single 8mm hole. Will mount onto 3mm Perspex®. Length including leads: 21mm.

| Code | 1+    | 100+  |
|------|-------|-------|
| 4119 | £0.55 | £0.48 |



### 9V PP3 BATTERY CLIP LEAD TO 2.1MM DC CONNECTOR

Versatile PP3 adaptor: plug a 9V battery into one end and connect the other end to anything with a 2.1mm, centre-positive barrel jack.

| Code | 1+    | 10+   |
|------|-------|-------|
| 4132 | £0.95 | £0.80 |



### USB-B to 2.1mm Jack Cable, 5V, 2A

This cable adapts from a USB port to a 5.5 x 2.1mm barrel connector, centre positive. This cable allows the user to use a USB port on a computer, laptop, or on our USB power supply.

| Code | 1+    |
|------|-------|
| 4179 | £2.00 |



**Free UK delivery on all orders over £40**

(Excludes large sheet materials and deliveries to remote locations)



## CLIP WIRES

Packs of 10 wires in a selection of 5 / 6 colours each with insulated crocodile clips on both ends. (Lead length 0.5m, max current 0.5 Amp)

| Description          | Code | 1+    | 10+   |
|----------------------|------|-------|-------|
| Clip wires - 10 pack | 2407 | £1.85 | £1.65 |



## CLIP WIRES – SHORT LENGTHS

Miniature Crocodile Leads, with crocodile clips on both ends. Sold as a pack of 5 or 10 with a selection of five colours. Max. current supported: 0.5A.

| Description                           | Code | 1+    | 10+   |
|---------------------------------------|------|-------|-------|
| Clip wires with 50mm leads - 5 pack   | 2491 | £1.15 | £1.00 |
| Clip wires with 100mm leads - 10 pack | 2484 | £2.30 | £2.10 |
| Clip wires with 150mm leads - 10 pack | 2485 | £2.45 | £2.30 |



## CROCODILE CLIP

A 50mm crocodile clip, with a 4mm socket. Screw or solder connection. **Pack of 25.**

| Description               | Code | 1+    |
|---------------------------|------|-------|
| Crocodile clips - 25 pack | 2422 | £1.80 |



## ALLIGATOR CLIP WITH FEMALE HEADER

This is a 4 pack of wires that are pre-terminated with an alligator (crocodile) clip on one end and a female header connection on the other. Can be used with a micro:bit.

| Description                                 | Code | 1+    | 10+   | 100+  |
|---|------|-------|-------|-------|
| Alligator clips with female header - 4 pack | 2447 | £2.95 | £2.45 | £1.95 |



## USB CABLE A TO B

Standard issue USB 2.0 cables. This is the most common A to B Male/Male type peripheral cable. May come in White or Black.

| Description      | Code | 1+    |
|------------------|------|-------|
| USB cable A to B | 4109 | £2.00 |



## USB NOODLE CABLE

A 1M White Anti-Tangle (flat type) USB Type-A to Micro-B USB Noodle cable.

| Description      | Code | 1+    | 10+   |
|------------------|------|-------|-------|
| USB noodle cable | 4154 | £1.50 | £1.25 |



### 3.5MM JACK LEADS

Stereo 3.5mm jack leads, with ground and one (mono) or two (stereo) channels connected to a 50cm lead.

| Description            | Code | 1+    | 10+   | 100+  |
|------------------------|------|-------|-------|-------|
| 3.5mm mono jack lead   | 4105 | £0.40 | £0.35 | £0.30 |
| 3.5mm stereo jack lead | 4111 | £0.55 | £0.50 | £0.45 |



### 3.5MM TO 3.5MM STEREO JACK CABLE

A 3.5mm to 3.5mm stereo jack lead. Length 1.2m.

| Description                      | Code | 1+    | 10+   |
|----------------------------------|------|-------|-------|
| 3.5mm to 3.5mm stereo jack cable | 4126 | £0.99 | £0.79 |

## COMPONENT STARTER KIT

No classroom should be without this component starter pack. Containing over 1400 parts, including LEDs, resistors, capacitors, transistors, switches, buzzers, battery holders & battery snaps. Supplied in a multi-compartment box. Full contents listed below.



#### Kit contents:

- Red 5mm LED x 50.
- Green 5mm LED x 50.
- Yellow 5mm LED x 50.
- White 5mm LED x 25.
- Blue 5mm LED x 25.
- Panel mount LED clip x 50.
- NPN transistor (BC547) x 50.
- PNP transistor (BC558) x 50.
- 1nF, 10nF, 100nF capacitor, 50 of each.
- 1µF, 10µF, 100µF capacitor, 25 of each.
- 10K trimmer potentiometers x 25.
- 100Ω, 220Ω, 330Ω, 470Ω, 1KΩ, 10KΩ, 100KΩ, 1MΩ, 100 of each resistor.
- Piezo buzzer with drive x 5.
- Push to make switch red x 10.
- Miniature slide switch x 10.
- Heavy duty PP3 battery snap x 25.
- 3x AA battery cage x 2.
- 4x AA battery cage x 2.

| Description           | Code | 1+     |
|-----------------------|------|--------|
| Component starter kit | 2304 | £45.00 |



## LED KIT

The LED kit contains red, green & yellow LEDs in 3mm round, 5mm round and 10mm round sizes, as well as some colour changing LEDs, Tri colour LEDs and LED panel mounting holders. Over 100 parts are supplied in a multiple compartment storage box.

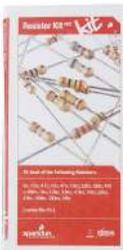
| Description | Code | 1+     |  |
|-------------|------|--------|--|
| LED kit     | 2327 | £12.50 |  |



## RESISTOR KIT - 1/4 W (1550 TOTAL)

The resistor kit contains 31 different resistors, 6 per decade (10, 15, 22, 33, 47, 68, 100, etc) to cover values between 10 ohms and 1 meg ohm, with 50 of each value. There are over 1,500 resistors in total. Each value is placed into a labelled grip seal bag to make up a box of resistors. Supplied with information on resistor identification.

| Description                       | Code | 1+     |  |
|-----------------------------------|------|--------|--|
| Resistor kit - 1/4 W (1550 total) | 2302 | £15.00 |  |



## RESISTOR KIT - 1/4W (500 TOTAL)

The resistor kit contains a range of 20 different resistors covering values from 0 Ohms to 1 Meg Ohms (25 of each). Supplied in an easy to use tri-fold pack.

| Description                     | Code | 1+    |  |
|---------------------------------|------|-------|--|
| Resistor kit - 1/4W (500 total) | 4682 | £9.85 |  |

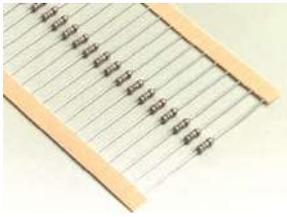


## SPACER KIT

The spacer kit contains M3 plastic spacers in different lengths and a variety of bolts. All the project PCBs can be mounted using these spacers. All the parts are placed into a multiple compartment storage box for ease of use. The kit contains a total of 300 pieces allowing 25 PCBs to be mounted.

| Description | Code | 1+     | 5+     |
|-------------|------|--------|--------|
| Spacer kit  | 2202 | £15.95 | £15.45 |

## RESISTORS



These resistors are available in either packs of 100 or boxes of 1,000.

To order simply use 3003 for a pack of 100 or 3004 for a box of 1,000 and append the

desired value to the code. Example, for a pack of 100 x 10K resistors you would use a code of 3003-10K.

**i** 0.25W resistors with 5% tolerance.

The following values are available:

|      |      |      |      |      |      |
|------|------|------|------|------|------|
| 0R   |      |      |      |      |      |
| 1R   |      |      | 4R7  |      |      |
| 10R  | 15R  | 22R  | 33R  | 47R  | 68R  |
| 100R | 150R | 220R | 330R | 470R | 680R |
| 1K   | 1K5  | 2K2  | 3K3  | 4K7  | 6K8  |
| 10K  | 15K  | 22K  | 33K  | 47K  | 68K  |
| 100K | 150K | 220K | 330K | 470K | 680K |
| 1M   | 1M2  |      | 4M7  | 10M  |      |

| Description           | Code                                    | 1+    |
|-----------------------|---|-------|
| Pack of 100 resistors | 3003 plus value (see above for details) | £0.70 |
| Box of 1000 resistors | 3004 plus value (see above for details) | £6.50 |

## THERMISTORS

Thermistors change resistance depending upon temperature. They are available in two resistance values. Sold in packs of 10.



| Description               | Code     | 1+    |
|---------------------------|----------|-------|
| 2.2k thermistor - 10 pack | 3006-2k2 | £2.70 |
| 4.7k thermistor - 10 pack | 3006-4k7 | £2.70 |

## WIREWOUND RESISTOR

A higher power resistor that can be used with power LEDs and other higher current devices. Sold in packs of 10.



| Description              | Code     | 1+    |
|--------------------------|----------|-------|
| 2.5W, 2.2 ohms - 10 pack | 3009-2R2 | £1.60 |
| 2.5W, 10 ohms - 10 pack  | 3009-10R | £1.60 |
| 2.5W, 33 ohms - 10 pack  | 3009-33R | £1.60 |

## INDUCTOR 470µH

Axial inductor. Sold in packs of 10.



| Description              | Code       | 1+    |
|--------------------------|------------|-------|
| 470µH inductor - 10 pack | 3008-470UH | £2.50 |

## RESETTABLE FUSE 0.05A 60VDC



Resettable fuse. Trip current 100mA, hold current 50mA. Max voltage 60V.

| Code | 1+    | 10+   |
|------|-------|-------|
| 2992 | £0.70 | £0.50 |

## LINEAR POTENTIOMETERS



16mm linear PCB mounting potentiometer. Carbon track with serrated shaft. Fixing hardware included.

| Description | Code      | 1+    | 50+   | 500+  |
|-------------|-----------|-------|-------|-------|
| 10k         | 3010-10K  | £0.55 | £0.50 | £0.45 |
| 100k        | 3010-100K | £0.55 | £0.50 | £0.45 |
| 1M          | 3010-1M   | £0.55 | £0.50 | £0.45 |

## DUAL WIPE POTENTIOMETERS



A carbon track, dual 10K potentiometer with serrated shaft. Fixing hardware included.

| Description | Code     | 1+    | 10+   | 100+  |
|-------------|----------|-------|-------|-------|
| 10k         | 3007-10K | £1.15 | £0.90 | £0.70 |

## POTENTIOMETER KNOB



Push fit potentiometer knob. Fits 6mm splined shaft, compatible with our range of 16mm commercial potentiometers (top left).

| Description    | Code | 1+    | 10+   |
|----------------|------|-------|-------|
| Red / Black    | 2072 | £0.35 | £0.30 |
| Blue / Black   | 2073 | £0.35 | £0.30 |
| Yellow / Black | 2074 | £0.35 | £0.30 |
| White / Black  | 2075 | £0.35 | £0.30 |

## PCB TRIMMER POTENTIOMETERS



An enclosed, single turn, trimming potentiometer. Designed to be directly mounted on to the PCB.

| Description    | Code      | 1+    |
|----------------|-----------|-------|
| 10k - 25 pack  | 3001-10K  | £3.35 |
| 47k - 25 pack  | 3001-47K  | £3.35 |
| 100k - 25 pack | 3001-100K | £3.35 |
| 220k - 25 pack | 3001-220K | £3.35 |
| 1M - 25 pack   | 3001-1M   | £3.35 |
| 10M - 25 pack  | 3001-10M  | £3.35 |

## 1F SUPER CAPACITOR, 5.5V



This 1F capacitor will run an LED for around 10 minutes. 1F, max voltage 5.5V, dia 20mm, height 6.5mm, lead pitch 6mm.

| Description              | Code    | 1+    | 10+   | 100+  |
|--------------------------|---------|-------|-------|-------|
| 1F super capacitor, 5.5V | 3103-1F | £1.50 | £1.10 | £0.95 |

# MATERIALS!

VIEW OUR FULL RANGE OF MATERIALS ONLINE



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We understand that a great project doesn't end with an electronic project kit. For this reason, we stock a wide range of design and technology materials to help you create the perfect finish for your projects. Most of our materials are also suitable for use on a laser cutter.



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[kitronik.co.uk/maker-tutorials](http://kitronik.co.uk/maker-tutorials)

1 MM

2 MM

3 MM

5 MM

[WWW.KITRONIK.CO.UK](http://WWW.KITRONIK.CO.UK)  
REF:



## CERAMIC CAPACITORS

A general purpose, high quality ceramic disc capacitor.  
Rated voltage = 50V (except 39pF which is 100V).

| Description          | Code      | 1+    | 10+   |
|----------------------|-----------|-------|-------|
| 100V, 22pF - 50 pack | 3101-22P  | £1.40 | £1.20 |
| 100V, 33pF - 50 pack | 3101-33P  | £1.40 | £1.20 |
| 100V, 39pF - 50 pack | 3101-39P  | £1.40 | £1.20 |
| 50V, 180pF - 50 pack | 3101-180P | £0.80 | £0.60 |
| 50V, 220pF - 50 pack | 3101-220P | £0.85 | £0.75 |
| 50V, 330pF - 50 pack | 3101-330P | £0.80 | £0.60 |
| 50V, 470pF - 50 pack | 3101-470P | £0.90 | £0.70 |
| 50V, 1nF - 50 pack   | 3101-1N   | £0.85 | £0.70 |
| 50V, 2.2nF - 50 pack | 3101-2N2  | £0.95 | £0.75 |
| 50V, 3.3nF - 50 pack | 3101-3N3  | £0.85 | £0.65 |
| 50V, 4.7nF - 50 pack | 3101-4N7  | £0.90 | £0.70 |
| 50V, 10nF - 50 pack  | 3101-10N  | £0.85 | £0.65 |
| 50V, 22nF - 50 pack  | 3101-22N  | £1.10 | £0.90 |
| 50V, 47nF - 50 pack  | 3101-47N  | £1.60 | £1.35 |
| 50V, 100nF - 50 pack | 3101-100N | £1.45 | £1.25 |
| 50V, 220nF - 25 pack | 3101-220N | £1.60 | £1.35 |
| 50V, 470nF - 10 pack | 3101-470N | £1.10 | £1.00 |



## ELECTROLYTIC CAPACITORS

A general purpose, high quality electrolytic capacitor.

| Description  | Code          | 1+    | 10+   |
|--|---------------|-------|-------|
| Capacitor, electrolytic, 50V, 0.47 $\mu$ F - 25 pack     | 3102-470N     | £1.00 | £0.90 |
| Capacitor, electrolytic, 50V, 1 $\mu$ F - 25 pack        | 3102-1U       | £0.90 | £0.60 |
| Capacitor, electrolytic, 50V, 2.2 $\mu$ F - 25 pack      | 3102-2U2      | £0.90 | £0.60 |
| Capacitor, electrolytic, 50V, 4.7 $\mu$ F - 25 pack      | 3102-4U7      | £0.90 | £0.60 |
| Capacitor, electrolytic, 16V, 10 $\mu$ F - 25 pack       | 3102-10U      | £0.75 | £0.45 |
| Capacitor, electrolytic, 16V, 22 $\mu$ F - 25 pack       | 3102-22U      | £0.95 | £0.65 |
| Capacitor, electrolytic, 16V, 47 $\mu$ F - 25 pack       | 3102-47U      | £0.95 | £0.65 |
| Capacitor, electrolytic, 16V, 100 $\mu$ F - 25 pack      | 3102-100U     | £0.80 | £0.50 |
| Capacitor, electrolytic, 25V, 100 $\mu$ F - 25 pack      | 3102-100U-25V | £1.10 | £0.80 |
| Capacitor, electrolytic, 16V, 220 $\mu$ F - 25 pack      | 3102-220U     | £1.10 | £0.80 |
| Capacitor, electrolytic, 16V, 470 $\mu$ F - 25 pack      | 3102-470U     | £1.80 | £1.50 |
| Capacitor, electrolytic, 10V, 1mF - 25 pack              | 3102-1M       | £1.80 | £1.50 |
| Capacitor, low impedance electrolytic, 16V, 1000 $\mu$ F | 3102-1000U    | £0.24 | £0.13 |
| Capacitor, electrolytic, 10V, 2.2mF - 25 pack            | 3102-2M2      | £3.30 | £2.80 |

## BUZZERS WITH BUILT IN DRIVE



### PIEZO BUZZER

Low cost miniature piezo buzzer with built in drive circuitry and flying leads. Pack of 10.

|                    |                         |
|--------------------|-------------------------|
| <b>Voltage:</b>    | 3 – 24V DC.             |
| <b>Current:</b>    | 15mA.                   |
| <b>Dimensions:</b> | 32 mm dia. x 14mm high. |
| <b>Frequency:</b>  | 3.7 kHz.                |
| <b>Output:</b>     | 90db @30cm.             |

| Description            | Code | 1+    |
|------------------------|------|-------|
| Piezo buzzer - 10 pack | 3301 | £7.95 |



### MINIATURE BUZZER

Low cost miniature buzzer with built in drive circuitry and flying leads. Pack of 10.

|                    |                     |
|--------------------|---------------------|
| <b>Dimensions:</b> | L 23, W 17, D 15mm. |
| <b>Frequency:</b>  | 400Hz.              |
| <b>Output:</b>     | 75db @ 30cm.        |
| <b>Current:</b>    | 30mA.               |

| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| Miniature buzzer 3V - 10 pack | 3305 | £6.95 |
| Miniature buzzer 6V - 10 pack | 3306 | £6.95 |
| Miniature buzzer 9V - 10 pack | 3307 | £6.95 |



### PCB MOUNT BUZZER

Miniature PCB mount buzzers with built in drive circuit (as used on our wireless steady hand kit).

|                        |                                   |
|------------------------|-----------------------------------|
| <b>3311 – Voltage:</b> | 9 – 15V DC.                       |
| <b>Current:</b>        | 30mA max.                         |
| <b>Dimensions:</b>     | 12 dia, 7.5 high, 7.6 pitch (mm). |
| <b>3342 – Voltage:</b> | 4 – 7V DC.                        |
| <b>Current:</b>        | 30mA max at 5V.                   |
| <b>Dimensions:</b>     | 12 dia, 9.5 high, 7.6 pitch (mm). |

| Description          | Code | 1+    | 10+   |
|----------------------|------|-------|-------|
| PCB mount buzzer 12V | 3311 | £0.60 | £0.50 |
| PCB mount buzzer 5V  | 3342 | £0.60 | £0.55 |

## BUZZERS WITHOUT DRIVE



### PIEZO BUZZER (NO DRIVE)

Low cost miniature piezo buzzer with flying leads. Requires external drive circuit. Pack of 10.

**Voltage:** 3 – 30V DC.

**Current:** 2mA.

**Resonant freq:** 3.8 kHz.

**Dimensions:** 24 mm dia. x 5.5 mm high.

| Description                       | Code | 1+    |
|-----------------------------------|------|-------|
| Piezo buzzer (no drive) - 10 pack | 3303 | £9.25 |



### PCB PIEZO BUZZER

Miniature PCB mount piezo buzzer. Requires external drive circuit.

**Voltage:** 3 – 25V DC.

**Current:** 1.5mA @ 5V.

**Dimensions:** 17 dia, 9 high, 10 pitch (mm).

| Description  | Code | 1+    | 10+   | 100+  |
|--------------|------|-------|-------|-------|
| Piezo buzzer | 3308 | £0.55 | £0.42 | £0.37 |



### 0.25W 8 OHM 40MM THIN SPEAKER

At a thickness of only 4mm this is the perfect speaker for projects that produce sound but where space is tight or where the speaker needs to be discreet. These speakers work well with the BBC micro:bit and with our mono amp kit.

| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| 0.25W 8 ohm 40mm thin speaker | 3341 | £0.95 |



### ½W SPEAKERS

8 ohm miniature paper cone speakers. Pack of 10.

| Description                           | Code | 1+    |
|---------------------------------------|------|-------|
| 8 ohm 50mm diameter speaker - 10 pack | 3302 | £5.50 |
| 8 ohm 66mm diameter speaker - 10 pack | 3304 | £5.95 |



## 2W 5CM FULL RANGE 8 OHM SPEAKER

A high quality, full range, 5 cm (2") miniature speaker with plastic diaphragm and metal basket. Its compact dimensions make it suitable for signal output in machines and other equipment where space is at a premium.

| Description                     | Code | 1+    | 10+   |
|---------------------------------|------|-------|-------|
| 2W 5cm full range 8 ohm speaker | 3313 | £2.15 | £1.95 |



## 5W 6.5CM FULL RANGE 4 OHM SPEAKERS

When the budget doesn't stretch to the high power amp and you have selected the mono or stereo amplifier then you can improve the sound quality by adding this speaker. It is 65 mm, 5W full range speaker whilst the circuit board won't drive the speaker at its full potential it will still sound a whole lot better.

| Description                       | Code | 1+    | 10+   | 100+  |
|-----------------------------------|------|-------|-------|-------|
| 5W 6.5cm full range 4 ohm speaker | 3315 | £4.55 | £4.15 | £3.85 |



## 6.5CM SQUARE SPEAKER GRILLES

This protective grille is designed to protect 65mm speakers and is a perfect match for our speaker code 3315 (which are used on our 3W Class D Amp kit). They are available in a square design. The protective mesh section is made of painted metal and the outer section is made of plastic.

| Description                            | Code | 1+    | 10+   |
|--|------|-------|-------|
| 6.5cm square protective speaker grille | 3336 | £5.00 | £4.50 |



## 10W 8 OHM 100MM SQUARE MYLAR CONE SPEAKER

A 10W weatherproof Mylar cone speaker, designed for outdoor use as the Mylar cones are impervious to water or moisture. 100mm cone with square mounting plate.

| Description                               | Code | 1+    | 10+   |
|---|------|-------|-------|
| 10W 8 ohm 100mm square Mylar cone speaker | 3322 | £4.65 | £4.30 |



## 20W 10CM FULL RANGE 8 OHM SPEAKER

This is a high quality 10 cm (4"), 8 ohm, full-range speaker with tweeter cone and European standard basket. Simple fitting in cases/vehicles with cut-outs for 10cm speakers. The sound quality is excellent and is ideal for many audio applications.

| Description                       | Code | 1+    | 10+   |
|-----------------------------------|------|-------|-------|
| 20W 10cm full range 8 ohm speaker | 3312 | £6.25 | £5.75 |

## TRANSISTORS

| Description     | Case | I max (mA) | Hfe min | Pack Qty | Code | 1+    |
|-----------------|------|------------|---------|----------|------|-------|
| BC547 NPN       | T092 | 100        | 200     | 50       | 2901 | £1.55 |
| BC558 PNP       | T092 | 100        | 240     | 50       | 2902 | £1.85 |
| BC108 NPN       | T018 | 100        | 120     | 25       | 2903 | £7.45 |
| BC337 NPN       | T092 | 800        | 160     | 50       | 2938 | £1.65 |
| BC548B NPN      | T092 | 100        | 200     | 50       | 2958 | £1.85 |
| 2N7000 N ch FET | T092 | 200        | N/A     | 25       | 2946 | £2.70 |

## ICs

| Part     | Description                   | Package      | Code | 1+    | 5+    | 100+  |
|----------|-------------------------------|--------------|------|-------|-------|-------|
| 4011B    | Quad 2 input NAND gate        | DIL 14       | 2911 | £0.40 | £0.36 | £0.32 |
| 4049B    | Hex inverter                  | DIL 16       | 2948 | £0.40 | £0.36 | £0.32 |
| 4071B    | Quad 2 input OR gate          | DIL 14       | 2912 | £0.37 | £0.32 | £0.30 |
| 4081B    | Quad 2 input AND gate         | DIL 14       | 2913 | £0.39 | £0.35 | £0.32 |
| 4510B    | BCD up / down counter         | DIL 16       | 2914 | £0.78 | £0.65 | £0.45 |
| 4511B    | BCD to 7 segment driver       | DIL 16       | 2915 | £0.58 | £0.48 | £0.37 |
| 4017B    | Decade counter                | DIL 16       | 2916 | £0.52 | £0.50 | £0.46 |
| L7805    | 5V regulator IC               | TO220        | 2906 | £0.41 | £0.31 | £0.24 |
| LM324    | Quad op amp                   | DIL 14       | 2907 | £0.37 | £0.27 | £0.18 |
| LM358    | Dual op amp IC                | DIL 8        | 2951 | £0.35 | £0.30 | £0.25 |
| LM386    | Pre-amplifier                 | DIL 8        | 2949 | £0.90 | £0.85 | £0.75 |
| NE555    | Single timer IC               | DIL 8        | 2908 | £0.30 | £0.20 | £0.13 |
| NE556    | Dual timer IC                 | DIL 14       | 2909 | £0.47 | £0.37 | £0.28 |
| NJM2073D | Stereo audio amplifier        | DIL 8        | 2944 | £0.70 | £0.60 | £0.55 |
| TDA7297  | 15W+15W Dual bridge amplifier | Multiwatt 15 | 2952 | £3.80 | £2.80 | £2.17 |

## THYRISTORS & DIODES

| Part   | Description           | Package | Pack Qty | Code | 1+    | 10+   | 100+  | 1000+ |
|--------|-----------------------|---------|----------|------|-------|-------|-------|-------|
| 2N5061 | Thyristor             | T092    | 25       | 2904 | £3.45 |       |       |       |
| 1N4001 | Diode (1A)            | DO-41   | 100      | 2905 | £1.70 | £1.45 |       |       |
| 1N4148 | Signal diode (150mA)  | DO-41   | 100      | 2943 | £0.90 |       |       |       |
| BAT41  | Schottky signal diode | DO-35   | 25       | 2950 | £2.50 |       |       |       |
| 1N5400 | Diode (3A)            | DO-27   | 1        | 2953 | £0.17 | £0.07 | £0.06 | £0.05 |



## IC SOCKETS

Low profile DIL sockets with dual wipe tin plated contacts, stamped and formed.

**Standard pitch:** 0.1" (2.54mm). **Height:** 5mm above PCB.

| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| IC socket 8 pin - tube of 60  | 2930 | £1.50 |
| IC socket 14 pin - tube of 34 | 2931 | £1.50 |
| IC socket 16 pin - tube of 30 | 2932 | £1.50 |
| IC socket 18 pin - tube of 26 | 2941 | £1.50 |



## RELAY HF7FD

Sub-miniature single pole changeover relay.

**Current rating:** 10A. **Dimensions:** 22.5 x 16.5 x 16.5 mm.

**Operation time:** 10mS. **Coil resistance:** 6V = 100Ω.

| Description              | Code | 1+    | 10+   |
|--------------------------|------|-------|-------|
| Relay HF7FD SPC0 10A, 6V | 2977 | £1.15 | £1.05 |



## TERMINAL BLOCKS

2 (25pk), 3 (10pk) and 4 (10pk) way terminal blocks with a 5mm pin spacing.

| Description                    | Code | 1+    |
|--------------------------------|------|-------|
| 2 way terminal block - 25 pack | 4161 | £2.75 |
| 3 way terminal block - 10 pack | 4170 | £2.75 |
| 4 way terminal block - 10 pack | 4171 | £2.95 |



## 12 WAY TERMINAL BLOCK

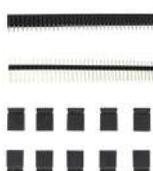
Standard commercial quality 12 way terminal blocks. Made of polythene and can be easily sub-divided. Max current 5 Amps. Pack of 10.

| Description                     | Code | 1+    |
|---------------------------------|------|-------|
| 12 way terminal block - 10 pack | 2410 | £3.35 |



## STRAIGHT SINGLE ROW PIN STRIP / SOCKET

Single / double row pin headers and turned pin sockets. 2.54mm spacing, suitable for programming and connector applications. Can be cut to length.



| Description                                     | Code | 1+    | 10+   |
|---|------|-------|-------|
| Straight single row PCB pin headers - 36 way    | 4133 | £0.27 | £0.20 |
| Straight single row turned pin sockets - 36 way | 4134 | £2.15 | £1.95 |
| Straight double row PCB pin headers, 2 x 20-way | 4151 | £0.35 | £0.25 |
| Closed link jumper - 10 pack                    | 4139 | £0.50 |       |



## MINIATURE PUSH TO MAKE SWITCH

Miniature push button, push to make, red. L 28, D 10mm. Pack of 25.

| Description                   | Code | 1+    |
|-------------------------------|------|-------|
| Push to make switch - 25 pack | 3401 | £3.80 |



## MINIATURE PUSH TO BREAK SWITCH

Miniature push button, push to break, black. L 30, D 12mm. Pack of 10.

| Description                    | Code | 1+    |
|--------------------------------|------|-------|
| Push to break switch - 10 pack | 3402 | £4.00 |



## FLAT PROFILE TACTILE SWITCH

A low profile PCB mount switch. Single pole normally open contact.  
L 6, W 6, H 4.3mm. Pack of 25.

| Description                        | Code | 1+    |
|------------------------------------|------|-------|
| Flat profile TACT switch - 25 pack | 3420 | £2.35 |



## PCB MOUNT SLIDE SWITCH

Right angle PCB mount slide switch. SPDT contacts.  
L 14, W 13.2, H 9.4mm. Pack of 10.

| Description                      | Code | 1+    |
|----------------------------------|------|-------|
| PCB mount slide switch - 10 pack | 3415 | £2.95 |



## MINIATURE PCB MOUNT SLIDE SWITCH - 10 PACK

Right angle PCB mount slide switch. SPDT contacts.  
L 8.5, W 3.5, H 3.5mm. Pack of 10.

| Description                                | Code | 1+    | 10+   |
|--|------|-------|-------|
| Miniature PCB mount slide switch - 10 pack | 3422 | £1.70 | £1.60 |



## ULTRA MINIATURE SPDT SLIDE SWITCH

Body dimensions: L 20, W 5, H 15mm. Pack of 10.

| Description                                 | Code | 1+    |
|---|------|-------|
| Ultra miniature SPDT slide switch - 10 pack | 3442 | £1.70 |



## DPDT SLIDE SWITCH

Standard DPDT slide switches with solder tag connections.  
 L 22, W 8, H 13mm. Pack of 10.

| Description                               | Code | 1+                    |
|---|------|-----------------------|
| Standard slide switch (large) - 10 pack   | 3416 | <a href="#">£3.05</a> |
| Centre off slide switch (large) - 10 pack | 3417 | <a href="#">£2.95</a> |



## MINIATURE DPDT SLIDE SWITCH

Miniature DPDT slide switch.  
 L 15, W 7, H 18mm. Pack of 10.

| Description                           | Code | 1+                    |
|---------------------------------------|------|-----------------------|
| Miniature DPDT slide switch - 10 pack | 3404 | <a href="#">£1.70</a> |



## SPST ROCKER SWITCH

SPST rocker switch black, rectangular, snap fit.  
 L 21, W 9.6, H 28.5mm. Pack of 10.

| Description                         | Code | 1+                    |
|-------------------------------------|------|-----------------------|
| SPST black 'I/O' actuator - 10 pack | 3406 | <a href="#">£3.90</a> |



## SPST ROUND ROCKER SWITCH

SPST rocker switch black, round, snap fit.  
 L 16.5, Dia 23mm. Pack of 10.

| Description                        | Code | 1+                    |
|------------------------------------|------|-----------------------|
| SPST round rocker switch - 10 pack | 3407 | <a href="#">£3.25</a> |



## SPST WHITE ROUND ROCKER SWITCH

With quick-connect SPST contacts and a simple on off action featuring snap-in mounting. 23mm diameter. Pack of 10.

| Description                              | Code | 1+                    |
|--|------|-----------------------|
| SPST White Round Rocker Switch - 10 pack | 3443 | <a href="#">£5.50</a> |



## SPST 15MM MINI ROUND ROCKER SWITCH

With quick-connect SPST contacts and a simple on off action featuring snap-in mounting. 15mm diameter. Pack of 10.

| Description                                  | Code | 1+                    |
|--|------|-----------------------|
| SPST 15mm Mini Round Rocker Switch - 10 pack | 3444 | <a href="#">£5.20</a> |



## MINIATURE SPST TOGGLE SWITCH

SPST standard toggle switch. Body dimensions: **L** 13, **W** 8, **H** 9.5mm.

| Description        | Code | 1+    | 10+   |
|--------------------|------|-------|-------|
| SPST toggle switch | 3425 | £0.55 | £0.45 |



## MINIATURE SPDT TOGGLE SWITCH

SPDT miniature toggle switch.

Body dimensions: **L** 13, **W** 8, **H** 9.5mm. Pack of 10.

| Description                            | Code    | 1+    |
|--|---------|-------|
| Miniature SPDT toggle switch - 10 pack | 3423-10 | £4.25 |



## SPST SUB MINIATURE TOGGLE SWITCH

SPST sub miniature toggle switch.

Body dimensions: **L** 8.1, **W** 5.1, **H** 8.6mm. Pack of 10.

| Description                                | Code | 1+    |
|--|------|-------|
| Sub-Miniature toggle switch SPST - 10 pack | 3413 | £4.95 |



## SPST SQUARE LATCHING SWITCH

SPST square latching switch. **L** 34, **W** 15, **H** 15mm. Pack of 10.

| Description                                  | Code | 1+    |
|--|------|-------|
| Square latching push button switch - 10 pack | 3405 | £3.55 |



## NON-MERCURY TILT SWITCH

Non-Mercury tilt switch. Horizontal mounting with make to break changeover at 10° either side of horizontal. **L** 10.2, **Dia** 4.7mm.

| Description             | Code | 1+    |
|-------------------------|------|-------|
| Non-Mercury tilt switch | 3419 | £1.35 |



## SPDT MICRO SWITCHES

SPDT micro switch, solder terminals. **L** 20.1, **W** 6.5, **H** 10.2mm. Pack of 10.

| Description                                      | Code | 1+    |
|--|------|-------|
| Medium lever micro switch - 25mm Lever - 10 pack | 3403 | £5.25 |
| Long lever micro switch - 45mm Lever - 10 pack   | 3421 | £6.35 |



## ARCADE JOYSTICK

A heavy duty 4-way Pacman-type arcade joystick. The joystick uses four microswitches to detect on / off position and has an ABS plastic and solid alloy construction.

| Description                     | Code | 1+    |
|---------------------------------|------|-------|
| Arcade joystick - medium handle | 3426 | £6.49 |



## ARCADE PUSH BUTTONS

These 33mm round momentary convex push buttons are available in a range of bold colours, similar to the ones that you find on arcade games and have a simple screw in design.

| Description                      | Code | 1+    | 50+   | 100+  |
|----------------------------------|------|-------|-------|-------|
| Arcade push button 33mm - Pink   | 4676 | £0.78 | £0.65 | £0.52 |
| Arcade push button 33mm - Blue   | 4677 | £0.78 | £0.65 | £0.52 |
| Arcade push button 33mm - Green  | 4678 | £0.78 | £0.65 | £0.52 |
| Arcade push button 33mm - Yellow | 4679 | £0.78 | £0.65 | £0.52 |



## MES LAMP HOLDER

| Description                                   | Code | 1+    |
|---|------|-------|
| MES lamp holder (with plastic base) - 25 pack | 3516 | £4.50 |



## MES LAMP HOLDER (ECONOMY)

| Description                         | Code | 1+    |
|-------------------------------------|------|-------|
| MES lamp holder (economy) - 50 pack | 3517 | £3.25 |



## MES BULBS

| Description               | Code | 1+    |
|---------------------------|------|-------|
| MES bulb 1.5V, pack of 50 | 3518 | £4.75 |
| MES bulb 2.5V, pack of 50 | 3519 | £4.75 |
| MES bulb 3.5V, pack of 50 | 3520 | £4.75 |



### 3MM STANDARD DIFFUSED LED

| Colour | Typical mCd | Code | 1+    | 10+   | 100+  | 500+ | 1000+ |
|--------|-------------|------|-------|-------|-------|------|-------|
| Red    | 275         | 3501 | £0.10 | £0.05 | £0.04 |      | £0.03 |
| Green  | 35          | 3502 | £0.10 | £0.05 | £0.04 |      | £0.03 |
| Yellow | 125         | 3503 | £0.10 | £0.05 | £0.04 |      | £0.03 |



### 3MM STANDARD WATER CLEAR LED

| Colour | Typical mCd | Code  | 1+    | 10+   | 100+  | 500+  | 1000+ |
|--------|-------------|-------|-------|-------|-------|-------|-------|
| Red    | 1000        | 3598  | £0.10 | £0.05 | £0.04 |       | £0.03 |
| White  | 2750        | 35103 | £0.15 | £0.09 | £0.08 | £0.07 |       |



### 5MM STANDARD DIFFUSED LED

| Colour | Typical mCd | Code | 1+    | 10+   | 100+  | 500+  | 1000+ |
|--------|-------------|------|-------|-------|-------|-------|-------|
| Red    | 275         | 3504 | £0.10 | £0.05 | £0.04 |       | £0.03 |
| Green  | 35          | 3505 | £0.10 | £0.05 | £0.04 |       | £0.03 |
| Yellow | 125         | 3506 | £0.10 | £0.05 | £0.04 |       | £0.03 |
| White  | 700         | 3542 | £0.15 | £0.09 | £0.08 | £0.07 |       |
| Blue   | 500         | 3543 | £0.15 | £0.09 | £0.08 | £0.07 |       |
| Orange | 275         | 3567 | £0.10 | £0.05 | £0.04 |       | £0.03 |



### 5MM UV LED

5mm UV (ultra violet) LED is ideal for many lighting applications and products such as money checkers.

| Typical mCd | Code | 1+    | 10+   | 100+  | 500+  |
|-------------|------|-------|-------|-------|-------|
| 95          | 3566 | £0.48 | £0.39 | £0.32 | £0.28 |



### PHOTOTRANSISTOR LTR-4206

A Lite-On LTR-4206 Phototransistor (RoHS compliant) in a low cost plastic package (4mm dia.). It has been lensed for high light sensitivity.

| Description                        | Code  | 1+    |
|------------------------------------|-------|-------|
| Phototransistor LTR-4206 - 10 pack | 35139 | £2.19 |



### 5MM WIDE ANGLE WHITE LED

A 5mm, wide angle, high brightness white LED. Viewing angle = 140°

| Typical mCd | Code | 1+    | 10+   | 100+  | 500+  |
|-------------|------|-------|-------|-------|-------|
| 3000        | 3546 | £0.37 | £0.27 | £0.21 | £0.16 |



## 5MM STANDARD WATER CLEAR LED

| Colour | Typical mCd | Code  | 1+    | 10+   | 100+  | 500+  | 1000+ |
|--------|-------------|-------|-------|-------|-------|-------|-------|
| Red    | 1150        | 35104 | £0.10 | £0.05 | £0.04 |       | £0.03 |
| White  | 2250        | 35109 | £0.16 | £0.10 | £0.09 | £0.08 |       |
| Blue   | 1150        | 35108 | £0.15 | £0.09 | £0.08 | £0.07 |       |



## 5MM FLASHING LED

5mm flashing LEDs in red, green, yellow, blue & white. The LEDs flash at around 2Hz when connected to a 5V supply.

| Colour | Typical mCd | Code | 1+    | 10+   | 100+  | 1000+ |
|--------|-------------|------|-------|-------|-------|-------|
| Red    | 3500        | 3538 | £0.24 | £0.14 | £0.12 | £0.10 |
| Green  | 4000        | 3539 | £0.24 | £0.14 | £0.12 | £0.10 |
| Yellow | 3500        | 3540 | £0.24 | £0.14 | £0.12 | £0.10 |
| Blue   | 3500        | 3545 | £0.24 | £0.14 | £0.13 | £0.11 |
| White  | 8400        | 3592 | £0.26 | £0.16 | £0.14 | £0.13 |



Calculate the resistor value for your LED the easy way with our online calculator:

[www.kitronik.co.uk/ledcalc](http://www.kitronik.co.uk/ledcalc)

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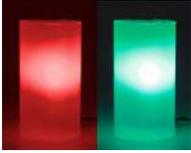
[www.kitronik.co.uk/custom-pcbs](http://www.kitronik.co.uk/custom-pcbs)



## COLOUR CHANGING LED

These LEDs cycle through various colours, making them ideal for mood lighting, toys or ornaments.

**Operating voltage:** 2.7V to 5V. **Current consumption (avg):** 25mA. **Lens:** Diffused.



^ Usage example.

| Description                  | Code | 1+    | 10+   | 100+  | 500+  |
|------------------------------|------|-------|-------|-------|-------|
| 5mm Superbright, slow cycle  | 3527 | £0.52 | £0.43 | £0.37 | £0.32 |
| 5mm Superbright, fast cycle  | 3560 | £0.52 | £0.43 | £0.37 | £0.32 |
| 5mm Bright, slow cycle       | 3591 | £0.48 | £0.39 | £0.32 | £0.27 |
| 10mm Superbright, slow cycle | 3544 | £0.58 | £0.48 | £0.43 | £0.38 |



## 5MM YELLOW CANDLE LED

This LED flickers to produce a look similar to that of a candle. This makes it ideal for mood lighting, toys or ornaments.

**Operating voltage:** 2.5V to 5V (this LED does not require a current limit resistor)

| Description | Typical mCd | Code | 1+    | 10+   | 100+  | 1000+ |
|-------------|-------------|------|-------|-------|-------|-------|
| Candle LED  | 5800        | 3590 | £0.30 | £0.26 | £0.22 | £0.20 |



## 5MM RGB LED

This 5mm RGB LED contains three LED elements (red, green and blue). Each element can be controlled independently. LEDs 3551 and 3574 have a water clear lens and 35125 has a diffused lens.

| Description               | Typical mCd | Code  | 1+    | 10+   | 100+  | 500+  |
|---------------------------|-------------|-------|-------|-------|-------|-------|
| Common anode              | 2100        | 3551  | £0.50 | £0.40 | £0.35 | £0.30 |
| Common cathode            | 2100        | 3574  | £0.50 | £0.40 | £0.35 | £0.30 |
| Common cathode - diffused | 500         | 35125 | £0.50 | £0.40 | £0.35 | £0.30 |



## 5MM TRICOLOUR LED - 25 PACK

This 5mm LED is a red, green & orange LED in one package.

| Description             | Typical mCd | Code | 1+    |
|-------------------------|-------------|------|-------|
| Tricolour LED - 25 pack | 650         | 3511 | £3.50 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.



## 5MM RED BIKE LIGHT LED - 50 PACK

| Typical mCd | Code | 1+    |
|-------------|------|-------|
| 1000        | 3507 | £4.50 |



## 5MM ULTRABRIGHT WATER CLEAR LED

| Colour | Typical mCd | Code | 1+    | 10+   | 100+  | 500+  |
|--------|-------------|------|-------|-------|-------|-------|
| White  | 5000        | 3524 | £0.30 | £0.25 | £0.20 | £0.16 |
| Blue   | 3500        | 3537 | £0.30 | £0.24 | £0.20 | £0.16 |



## 5MM MEGABRIGHT WATER CLEAR LED

| Colour  | Viewing angle | Typical mCd | Code  | 1+    | 10+   | 100+  | 500+  |
|---------|---------------|-------------|-------|-------|-------|-------|-------|
| White   | 15°           | 17500       | 3549  | £0.40 | £0.32 | £0.28 | £0.24 |
| White   | 30°           | 17500       | 3550  | £0.40 | £0.32 | £0.28 | £0.24 |
| Red     | 30°           | 9500        | 3579  | £0.30 | £0.22 | £0.19 | £0.16 |
| Sakura* | 15°           | 8400        | 35118 | £0.24 | £0.15 | £0.11 |       |

\*(Lilac)



## LED STAR

These power LED stars offer an extremely high light output in an energy efficient way.

| Description                  | Typical mCd | Code | 1+    | 10+   | 25+   |
|------------------------------|-------------|------|-------|-------|-------|
| 1W warm white power LED star | 45000       | 3547 | £1.65 | £1.55 | £1.45 |
| 3W white power LED star      | 67000       | 3548 | £2.10 | £2.00 | £1.90 |



## WHITE SUPER FLUX 5MM LED

| Colour | Typical mCd | Code | 1+    | 10+   | 100+  | 500+  |
|--------|-------------|------|-------|-------|-------|-------|
| White  | 1800        | 3597 | £0.30 | £0.22 | £0.19 | £0.16 |



[www.kitronik.co.uk/fluxled](http://www.kitronik.co.uk/fluxled)



For more information on LED forward voltages, viewing angles and brightness levels, see our online datasheet: [www.kitronik.co.uk/leddata](http://www.kitronik.co.uk/leddata)



## 10MM HIGH BRIGHTNESS DIFFUSED LED - 10 PACK

| Colour | Typical mCd | Code    | 1+    |
|--------|-------------|---------|-------|
| Red    | 900         | 3583-10 | £1.50 |
| Green  | 1750        | 3584-10 | £1.50 |
| Yellow | 900         | 3585-10 | £1.50 |
| White  | 1750        | 3586-10 | £2.20 |



## 10MM STANDARD DIFFUSED LED

| Colour | Typical mCd | Code | 1+    | 10+   | 100+  | 250+  |
|--------|-------------|------|-------|-------|-------|-------|
| Red    | 350         | 3508 | £0.15 | £0.12 | £0.10 | £0.08 |
| Green  | 350         | 3509 | £0.15 | £0.12 | £0.11 | £0.09 |
| Yellow | 500         | 3510 | £0.15 | £0.12 | £0.11 | £0.09 |



## PANEL MOUNT LED CLIP

Holder clips for panel mounting LEDs.

5mm LED holder bezel: 8mm dia.    10mm LED holder bezel: 16mm dia.

| Size | Pack Quantity | Code | 1+    |
|------|---------------|------|-------|
| 5mm  | 50            | 3541 | £2.00 |
| 10mm | 25            | 3582 | £4.25 |



## 5MM CHROME BEZEL LED HOLDER

Chrome plated brass recessed holder for 5mm LEDs.

Panel cutout size: 8mm dia.    Complete with fixing hardware.

| Description                 | Code  | 1+    | 10+   |
|-----------------------------|-------|-------|-------|
| 5mm chrome bezel LED holder | 35112 | £0.43 | £0.39 |

## CHOOSING A PSU FOR YOUR LED STRIPS

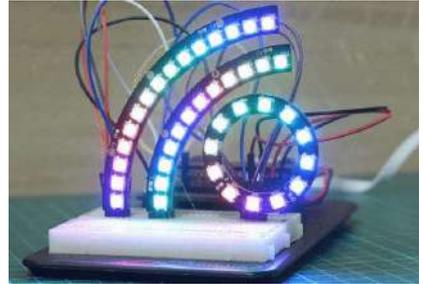
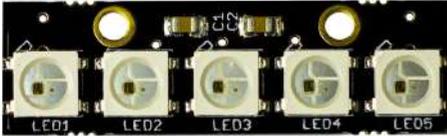
LED strips are very easy to use, but you need to make sure the power supply has sufficient capacity for the length of LED strips being used. As all the colours of LED strips take about 400 mA per meter, the longer the length of strip the bigger the power supply has to be. To save you doing the maths below is a table showing the maximum length for each of the power supplies.

| Max length  | Power supply              | Code | Page |
|-------------|---------------------------|------|------|
| 1.25m       | 12V, 500mA, wall plug PSU | 2260 | 154  |
| 5m (1 reel) | 12V, 2A, wall plug PSU    | 2266 | 154  |

## KITRONIK ZIP LEDs

Kitronik ZIP LEDs are addressable RGB LEDs. Each LED can be controlled independently and all LEDs are connected using the same three wire bus. Each LED can produce a full spectrum of colours independent to the other LEDs on the same stick. Multiple sticks, arcs, and circles can be connected together to produce a variety of shapes.

**i** The boards work from a supply voltage of 3.5V to 5V.



[← ZIP Stick \(35129\).](#)  
[www.kitronik.co.uk/zips](http://www.kitronik.co.uk/zips)

[↗ The ZIP Arcs and ZIP Circle in use.](#)

For more information on the ZIP LED range visit



| Description              | Code  | 1+    | 10+   |
|--------------------------|-------|-------|-------|
| ZIP Stick – 5 ZIP LEDs   | 35129 | £2.75 | £2.25 |
| ZIP Arc – 15 ZIP LEDs    | 35133 | £5.95 | £4.85 |
| ZIP Arc – 12 ZIP LEDs    | 35134 | £4.85 | £3.95 |
| ZIP Circle – 12 ZIP LEDs | 35135 | £5.15 | £4.25 |

## FLEXIBLE LED STRIPS

These energy efficient flexible LED strips are extremely versatile. The strips are adhesive backed and run off a 12VDC supply. The strips can be cut into sections.

For more information on LED strips visit



[www.kitronik.co.uk/ledstrips](http://www.kitronik.co.uk/ledstrips)



30 way = 30 LEDs per 1m  
with 10cm cut points.

| Description                              | Code    | 1+     | 10+   |
|--|---------|--------|-------|
| Red flexible LED strip, 30 way - 0.5m    | 3552    | £6.50  | £6.00 |
| Green flexible LED strip, 30 way - 0.5m  | 3553    | £6.50  | £6.00 |
| Blue flexible LED strip, 30 way - 0.5m   | 3554    | £6.50  | £6.00 |
| Yellow flexible LED strip, 30 way - 0.5m | 3555    | £6.50  | £6.00 |
| White flexible LED strip, 30 way - 0.5m  | 3556    | £6.50  | £6.00 |
| Red flexible LED strip, 30 way - 5m      | 3552-5M | £30.00 |       |
| Green flexible LED strip, 30 way - 5m    | 3553-5M | £30.00 |       |
| Blue flexible LED strip, 30 way - 5m     | 3554-5M | £30.00 |       |
| Yellow flexible LED strip, 30 way - 5m   | 3555-5M | £30.00 |       |
| White flexible LED strip, 30 way - 5m    | 3556-5M | £30.00 |       |



## HEATSHRINK

Heatshrink sleeving in various diameters.  
It shrinks to around half the size when heated.

| Description                      | Code | 1+    |
|----------------------------------|------|-------|
| Heatshrink mini reel, 1.6mm, 12m | 2431 | £7.65 |
| Heatshrink mini reel, 2.4mm, 11m | 2432 | £7.65 |
| Heatshrink mini reel, 3.2mm, 11m | 2441 | £7.90 |
| Heatshrink mini reel, 4.8mm, 10m | 2433 | £7.65 |
| Heatshrink mini reel, 6.4mm, 9m  | 2413 | £7.65 |



## FIGURE 8 SPEAKER CABLE

100m reels of flexible, black, speaker cable.  
Available in 1A, 2 x (7x0.18mm) and 2.5A (13x0.18mm) options.

| Description                  | Code | 1+     |
|------------------------------|------|--------|
| Figure 8 speaker cable, 1A   | 2448 | £9.95  |
| Figure 8 speaker cable, 2.5A | 2466 | £12.50 |



## TINNED COPPER WIRE

Tinned copper wire in a 16SWG gauge.  
500g reel with an approximate length of 25m.

| Description                    | Code | 1+     |
|--------------------------------|------|--------|
| Tinned copper wire – 500g reel | 2412 | £10.25 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.



## SOLDER ON!

Check out our range of soldering irons.  
See **pages 185 – 186.**

## WIRE

Rolls of wire, 10 and 100 metres in length and 1.2mm outer diameter are available in solid core or multi strand. Solid core (1 x 0.6mm core) cable is ideal for links on prototype board, strip board and PCBs. Multi strand (7 x 0.2mm cores) cable is ideal for connecting items to boards where the cable may flex. Available in black, red, blue, yellow, green and white.

Also available is extra flexible wire used in our steady hand game products. The wire's flexibility makes it ideal for many interconnecting tasks. This product is sold in 25 metre rolls and has a 2.8mm outer diameter.



| Description                           | Code | 1+    |
|---------------------------------------|------|-------|
| Solid core cable, 10m reel, red       | 2451 | £2.30 |
| Solid core cable, 10m reel, black     | 2452 | £2.30 |
| Multi-strand cable, 10m reel, red     | 2457 | £1.85 |
| Multi-strand cable, 10m reel, black   | 2458 | £1.85 |
| Solid core cable, 100m reel, black    | 2414 | £7.95 |
| Solid core cable, 100m reel, red      | 2415 | £7.95 |
| Solid core cable, 100m reel, blue     | 2416 | £7.95 |
| Solid core cable, 100m reel, yellow   | 2417 | £7.95 |
| Solid core cable, 100m reel, white    | 2464 | £8.00 |
| Solid core cable, 100m reel, green    | 2467 | £7.95 |
| Multi-strand cable, 100m reel, black  | 2418 | £7.25 |
| Multi-strand cable, 100m reel, red    | 2419 | £7.25 |
| Multi-strand cable, 100m reel, blue   | 2420 | £7.25 |
| Multi-strand cable, 100m reel, yellow | 2421 | £7.25 |
| Multi-strand cable, 100m reel, white  | 2468 | £7.25 |
| Multi-strand cable, 100m reel, green  | 2469 | £7.25 |
| Extra flexible wire, 25m, black       | 2424 | £5.15 |



## JUMPER WIRES

These are 20cm long jumpers. Multiple jumpers can be installed next to one another on a 0.1" header. Available in packs of 40.

| Description                        | Code                | 1+    |
|------------------------------------|---------------------|-------|
| Jumper wires 20cm M/M - pack of 40 | 4110-40             | £2.50 |
| Jumper wires 20cm M/F - pack of 40 | 4128-40             | £2.50 |
| Jumper wires 20cm F/F - pack of 40 | <b>NEW!</b> 4166-40 | £2.50 |



## WIRE KIT

The wire kit contains 14 different lengths of wire from 0.1" to 5". The wires are insulated in different colours and are formed ready for use. They come in a handy storage case and are ideal for use with the prototype board.

| Description           | Code | 1+    |
|-----------------------|------|-------|
| Wire kit - 140 pieces | 2402 | £4.85 |



## BREADBOARD JUMPER WIRE PACK

Basic breadboard jumper wire pack (male to male). Including 4 different lengths: 260mm, 220mm, 180mm and 120mm. Perfect design for a breadboard. Contains approx 65 pieces.

| Description                 | Code | 1+    |
|-----------------------------|------|-------|
| Breadboard Jumper Wire Pack | 4168 | £2.25 |



**Why not let us take the trouble out of manufacturing your school's PCBs** and you can share the volume savings we receive. For details on this service see the Kitronik web site (including a price estimator) or alternatively call our sales team.



## MINI PROTOTYPE BOARD

A board for prototyping circuits. Components and wires can be placed into the board and the circuit built and tested without soldering. Multiple boards can be interconnected. This board has 170 tie points.

**i** Components not included.

| Description          | Code | 1+    | 10+   |
|----------------------|------|-------|-------|
| Mini prototype board | 2446 | £1.79 | £1.59 |



## PROTOTYPE BOARDS

Components and wires can be placed into the board and the circuit built and tested without soldering. Multiple boards can be interconnected. Includes blue and red labelled 'power rail' along the length of the board on both edges.

| Description                                     | Code | 1+    | 10+   | 50+   |
|---|------|-------|-------|-------|
| Large prototype board - PBU202 - 830 tie points | 2444 | £4.15 | £3.75 |       |
| Small prototype board - PBU301 - 400 tie points | 2401 | £2.95 | £2.55 | £2.10 |



## STRIP BOARDS

Strip boards are ideal for prototypes or projects. Boards have a 0.1" pitch hole spacing and hole diameter of 1mm. Sold in sizes of 160 x 100mm (pack of 5, 35 strips x 61 holes) and 100mm x 250mm (35 strips and 95 holes).

| Description                        | Code | 1+    | 10+   |
|------------------------------------|------|-------|-------|
| Stripboards, 100 x 160 mm - 5 pack | 2404 | £8.95 |       |
| Stripboards, 100 x 250 mm          | 2439 | £2.50 | £2.30 |



## STRIP BOARD CUTTER

A strip board cutter used to break the tracks on strip board.

| Description        | Code | 1+    | 5+    |
|--------------------|------|-------|-------|
| Strip board cutter | 2602 | £2.85 | £2.65 |



## COPPER CLAD BOARD

Single sided copper clad board, 1.6mm thick.  
Suitable for use with ferric chloride or routing.

| Description                     | Code | 1+    | 10+   |
|---------------------------------|------|-------|-------|
| Copper clad board, 100 x 160 mm | 2434 | £1.05 | £1.00 |
| Copper clad board, 305 x 457 mm | 2435 | £6.60 |       |



## ECONOMY PHOTO RESIST BOARD

Single sided copper clad board, 1.6mm thick, with a positive working photo resist coating. Protected by a peel off black plastic film. Ideally suited to making printed circuit boards.

| Description                                | Code | 1+     | 10+    |
|--|------|--------|--------|
| Economy photo resist board SS 100 x 160 mm | 2436 | £3.50  | £3.35  |
| Economy photo resist board SS 305 x 457 mm | 2437 | £30.00 | £29.00 |



## COPPER TAPE – CONDUCTIVE ADHESIVE

This copper track tape is available in 5mm and 50mm widths and is supplied with adhesive, allowing it to be fixed on to a surface before components are soldered to it, in order to make a simple circuit. As the adhesive is conductive, a strip of tape can be placed on top of another piece of tape and it electrically connects. The tape is 0.031mm thick and the roll is approx 15m in length.

| Description                                   | Code | 1+     |
|---|------|--------|
| Copper tape – Conductive Adhesive, 5mm (15m)  | 2477 | £5.05  |
| Copper tape – Conductive Adhesive, 50mm (15m) | 2479 | £19.50 |



## COPPER TAPE

This copper track tape is 5mm wide and is supplied with adhesive, allowing it to be fixed on to a surface before components are soldered to it, in order to make a simple circuit. **The adhesive on this version is not conductive.** The tape is 0.03mm thick and the roll is approx 15m in length.

| Description                                      | Code | 1+    |
|--|------|-------|
| Copper tape – Non Conductive Adhesive, 5mm (15m) | 2478 | £5.00 |

## PAN HEAD M2 SCREWS

| Description                                 | Code | 1+    |
|---|------|-------|
| Pan head M2 x 6mm machine screw - 100 pack  | 2316 | £1.25 |
| Pan head M2 x 16mm machine screw - 100 pack | 2326 | £3.15 |

## PAN HEAD M3 SCREWS

| Description                                 | Code | 1+    |
|---|------|-------|
| Pan head M3 x 6mm machine screw - 100 pack  | 2309 | £0.75 |
| Pan head M3 x 10mm machine screw - 100 pack | 2310 | £0.90 |
| Pan head M3 x 12mm machine screw - 100 pack | 2311 | £0.95 |
| Pan head M3 x 16mm machine screw - 100 pack | 2339 | £1.20 |
| Pan head M3 x 30mm machine screw - 100 pack | 2319 | £2.15 |

## COUNTER SUNK M3 SCREWS

| Description                                     | Code | 1+    |
|---|------|-------|
| Counter sunk M3 x 6mm machine screw - 100 pack  | 2312 | £1.60 |
| Counter sunk M3 x 8mm machine screw - 100 pack  | 2334 | £1.70 |
| Counter sunk M3 x 10mm machine screw - 100 pack | 2313 | £1.70 |
| Counter sunk M3 x 12mm machine screw - 100 pack | 2314 | £1.80 |

## HEX FULL WIDTH NUT

| Description  | Code | 1+    |
|--|------|-------|
| M2 full width nut, stainless steel, zinc plated - 100 pack | 2325 | £0.95 |
| M3 full width nut, zinc - 100 pack                         | 2315 | £0.50 |
| M3 full width nut, nylon - 100 pack                        | 2330 | £2.90 |
| M3 stainless steel washer - 100 pack                       | 2340 | £0.48 |

## PLASTIC SPACERS

These nylon spacers with an M3 thread are ideal for mounting PCBs or layering wood or plastic. 6.6mm dia, 5.5mm across flats.

| Description                        | Code | 1+    |
|------------------------------------|------|-------|
| Plastic spacer 6mm - 100 pack      | 2335 | £6.70 |
| Plastic spacer 8mm - 100 pack      | 2306 | £6.75 |
| Plastic spacer 10mm - 100 pack     | 2333 | £8.00 |
| Plastic spacer 12.7mm - 100 pack   | 2307 | £8.25 |
| Plastic spacer 20mm - 100 pack     | 2308 | £9.75 |
| Plastic spacer 8mm M-F - 100 pack  | 2337 | £7.00 |
| Plastic spacer 10mm M-F - 100 pack | 2317 | £7.20 |

# 08

# TOOLS & TEST EQUIPMENT

## SECTION CONTENTS

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## ANTEX SOLDERING IRONS

Both of these Antex soldering irons have a **silicone heat resistant cable** which makes them much harder wearing and safer in a school environment. The CS18 18W iron is suitable for most soldering applications, the XS25 25W iron is ideal for situations where the extra power is needed for soldering larger parts.



| Description                | Code | 1+     | 10+    |
|----------------------------|------|--------|--------|
| Mains soldering iron - 18W | 2609 | £23.00 | £22.00 |
| Mains soldering iron - 25W | 2640 | £23.00 | £22.00 |

## ANTEX SOLDERING IRON STAND

Soldering iron stand with strong chromium plated steel spring with a heat resistant plastic base and integral sponge for bit cleaning.



| Description          | Code | 1+    |
|----------------------|------|-------|
| Soldering iron stand | 2611 | £5.75 |

## SOLDERING IRON REPLACEMENT TIPS

Pack of 3 replacement tips.



| Description                           | Code | 1+     |
|---------------------------------------|------|--------|
| 18W iron replacement tips - 3 pack    | 2606 | £11.75 |
| 25W iron replacement tips - 3 pack    | 2641 | £11.75 |
| 18W fine soldering iron tips - 3 pack | 2663 | £11.75 |

## ANTEX REPLACEMENT SPONGES

Pack of 5 replacement sponges for soldering iron stand.



| Description                  | Code | 1+    |
|------------------------------|------|-------|
| Replacement sponges - 5 pack | 2607 | £4.25 |

## FUME EXTRACTOR & FILTERS

A mains powered filter unit with a powerful 120mm fan, for removal of soldering fumes. Additional filter pads available separately.



| Description            | Code | 1+     |
|------------------------|------|--------|
| Fume extractor unit    | 2635 | £30.00 |
| Spare filters - 3 pack | 2636 | £3.00  |



## ECONOMY SOLDERING IRON 25W

An economy 25W Soldering Iron. It is mains powered and perfect for occasional light use. Supplied with a pointed tip.

| Description                  | Code  | 1+    |
|------------------------------|-------|-------|
| Economy soldering iron - 25W | 26101 | £4.25 |



## ECONOMY SOLDERING IRON STAND

An economy Soldering Iron Stand has a hollow base and includes a sponge for cleaning your soldering iron tip. Ideal for use with our economy soldering iron.

| Description                  | Code  | 1+    |
|------------------------------|-------|-------|
| Economy soldering iron stand | 26102 | £1.80 |



## SOLDERING IRON STARTER KIT

A convenient Soldering Starter Kit consisting of a 30W Soldering Iron, Safety Stand, Desoldering Pump and Solder.

| Description                | Code  | 1+     |
|----------------------------|-------|--------|
| Soldering Iron Starter Kit | 26104 | £11.85 |



## SOLDER EXTRACTOR

The solder extractor allows incorrect solder joints to be removed. Molten solder is sucked into the extractor when the button is pressed.

| Description      | Code | 1+    | 10+   |
|------------------|------|-------|-------|
| Solder extractor | 2623 | £3.40 | £3.00 |



## DESOLDERING IRON / SOLDER SUCKER

This heated desoldering iron / sucker provides a simple solution to fixing soldered connections. Solder removal can be achieved with a single tool and operation, rather than having to use a sucker & a standard soldering iron, while also holding the board.

| Description                      | Code  | 1+    | 10+   |
|----------------------------------|-------|-------|-------|
| Desoldering iron / solder sucker | 26108 | £6.05 | £5.95 |



## SOLDER

**Lead free solder:** Available in 100g and 250g reels. (99.3% tin, 0.7% copper).

| Description                  | Code | 1+     |
|------------------------------|------|--------|
| Lead free solder - 250g reel | 2608 | £15.00 |
| Lead free solder - 100g reel | 2648 | £6.50  |



## HELPING HANDS

Make soldering easy with these helping hands. The two crocodile clips can be easily adjusted to hold PCBs or components whilst soldering takes place. A 60mm magnifying glass can also be positioned to make viewing small parts easier.

| Description   | Code | 1+    | 10+   |
|---------------|------|-------|-------|
| Helping hands | 2622 | £4.25 | £3.75 |



## ANTI-MIST SAFETY GOGGLES WITH CLEAR LENSES

These anti-mist safety goggles with clear lenses provide an excellent fit for the user with a smaller face. The goggles contain a polycarbonate lens offering secure protection against impact hazards.

| Description                                | Code  | 1+    |
|--|-------|-------|
| Anti-Mist Safety Goggles with Clear Lenses | 26119 | £1.85 |



## SAFETY GLASSES

The wrap around lens on these safety glasses protects the eyes from exposure on the sides as well as from the front. The glasses comply with EN166-1995, the European standard for personal eye protection.

| Description    | Code | 1+    | 10+   |
|----------------|------|-------|-------|
| Safety glasses | 2627 | £2.40 | £2.30 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.



## SOLDER MOP

These specially impregnated wicks draw up molten solder, leaving the joint clean and ready for re-soldering. Supplied on a handy plastic spools.

**Economy solder mop:** An effective economy solder mop. (Length 1.5m, braid width 2.5mm)

**Quality solder mop:** A premium quality solder mop. (Length 1.5m, braid width 2.7mm)



| Description        | Code | 1+    |
|--------------------|------|-------|
| Economy solder mop | 2645 | £1.10 |
| Quality solder mop | 2697 | £4.55 |



## MULTICORE TIP TINNER AND CLEANER

Provides fast, efficient cleaning and re-tinning of highly oxidized soldering iron tips, therefore extending the life of the tip.

| Description                      | Code | 1+    |
|----------------------------------|------|-------|
| Multicore tip tinner and cleaner | 2678 | £7.45 |



## SOLDERING IRON TIP CLEANER

This soldering iron tip cleaner is made of low abrasive brass shavings, meaning no water or wet sponges are necessary. Dimensions 82 x 30mm.

 Dimensions: 82 x 30mm

| Description                | Code  | 1+    |
|----------------------------|-------|-------|
| Soldering iron tip cleaner | 26107 | £5.00 |



## SOLDERING IRON SPONGE

A high quality soldering iron sponge perfect for replacing old, worn out sponges on your soldering iron stand. It can be easily cut down to suit any size or shape soldering iron stand.

 Dimensions: 140 x 100mm

| Description           | Code  | 1+    |
|-----------------------|-------|-------|
| Soldering iron sponge | 26106 | £2.20 |



## PRECISION SCREWDRIVER SET

3 Flat Blade Screwdrivers & 3 Cross Point Screwdrivers, all long shaft.

| Description               | Code | 1+    |
|---------------------------|------|-------|
| Precision Screwdriver Set | 2616 | £4.15 |



## GENERAL PURPOSE TERMINAL STYLE SCREWDRIVER, PACK OF 10

This pack of general-purpose terminal style screwdrivers are perfect for working with boards/devices that feature terminal style connectors. These screwdrivers are supplied as a pack of 10.

| Description   | Code  | 1+    | 10+   |
|---|-------|-------|-------|
| General purpose terminal style screw driver, Pack of 10 | 26120 | £3.25 | £3.00 |



## AUTOMATIC WIRE STRIPPERS

These wire strippers hold and strip wire in one simple action. Exact trim lengths can be achieved with the integrated ruler. They can also be used to cut cable and adjusted to strip varying wire diameters.

| Description              | Code | 1+    | 10+   |
|--------------------------|------|-------|-------|
| Automatic wire strippers | 2617 | £5.40 | £5.10 |



## WIRE STRIPPERS

These light duty wire strippers with spring return will strip wire between 0.5mm to 4.0mm.

| Description    | Code | 1+    | 5+    |
|----------------|------|-------|-------|
| Wire strippers | 2632 | £4.20 | £4.00 |



## SIDE CUTTERS

Low cost side cutters with a flush cutting edge and return spring. Suitable for 0.2mm to 1.2mm diameter wires.

| Description  | Code | 1+    | 5+    |
|--------------|------|-------|-------|
| Side cutters | 2634 | £3.15 | £2.95 |



## 2-IN-1 WIRE STRIPPER AND CUTTERS

These versatile cutters are a great addition to any tool box.

They have the following features:

- Cut with one end, strip with the other.
- Stripper self adjusts to wire size.
- Strips soft copper (electronic) wire size 26 AWG to 14 AWG.
- Shaped plastic handles.

| Description                      | Code | 1+    |
|----------------------------------|------|-------|
| 2-in-1 wire stripper and cutters | 2674 | £6.75 |



## ECONOMY CUTTERS & PLIERS

Both cutters and pliers are sprung loaded and at around 10 cm in length are perfect for light use, such as cutting and bending component leads.

| Description          | Code | 1+    | 10+   |
|----------------------|------|-------|-------|
| Economy pliers       | 2619 | £1.90 | £1.60 |
| Economy wire cutters | 2620 | £1.90 | £1.60 |



## SIDE CUTTING MINI PLIERS

Hardened and tempered carbon steel jaws, for accurate and delicate work.

| Description                              | Code | 1+    | 10+   |
|--|------|-------|-------|
| Side cutting mini pliers - Length: 115mm | 2668 | £3.00 | £2.70 |



## LONG NOSE MINI PLIERS

Hardened and tempered carbon steel jaws, for accurate and delicate work.

| Description                           | Code | 1+    | 10+   |
|---------------------------------------|------|-------|-------|
| Long nose mini pliers - Length: 130mm | 2669 | £3.00 | £2.70 |



## NEEDLE NOSE MINI PLIERS

Hardened and tempered carbon steel jaws, for accurate and delicate work.

| Description                             | Code | 1+    | 10+   |
|---|------|-------|-------|
| Needle nose mini pliers - Length: 155mm | 2671 | £3.00 | £2.70 |



## 12 PIECE ELECTRONIC SOLDERING AND REPAIR KIT

Everything you need to get started with electronics in one handy great value pack.

- Set includes:**
- Soldering iron with spare tip.
  - Desoldering pump, with spare nozzle and piston ring.
  - 4.5" long nose pliers.
  - 4.5" diagonal cutting pliers.
  - Voltage tester.
  - Screwdriver (+) 5x100mm.
  - Soldering iron holder.
  - Multimeter.
  - Lead free solder.

| Description                                | Code  | 1+     |
|--|-------|--------|
| 12 piece electronic soldering & repair kit | 26103 | £19.85 |



## 6 PIECE NEEDLE FILE KIT

A 6 piece needle file kit with cushion grip. The pack contains the following files in a handy carry case: flat taper, half round, triangular, square, round and flat parallel.

Typical size: 3mm x 140mm

| Description                               | Code | 1+    | 10+   |
|---|------|-------|-------|
| 6 piece needle file kit with cushion grip | 2698 | £4.35 | £3.85 |



## ELECTRONIC DIGITAL CALLIPER

An LCD readout Digital Calliper. The display is switchable from metric to imperial. Resolution 0.01mm. A zero button enables reading to be reset to zero.

| Description                 | Code | 1+     |
|-----------------------------|------|--------|
| Electronic digital calliper | 2685 | £21.00 |



## 50 WATT GLUE GUN

Pistol grip gun with precise trigger control fitted with 3 pin BS plug. Melting temperature: approx 90°C. Supplied with two glue sticks.

| Description      | Code | 1+    |
|------------------|------|-------|
| 50 watt glue gun | 2676 | £6.20 |



## GLUE GUN STICKS - 12 PACK

For use with electric glue guns. Quick drying and strong bonding. For paper, wood, leather, ceramics, porcelain, glass.

Approx size: 11mm (diameter) x 100mm length.

| Description               | Code | 1+    |
|---------------------------|------|-------|
| Glue gun sticks - 12 pack | 2677 | £1.80 |



## INSULATION TAPE

This is high quality electrical grade self-adhesive insulating tape. The tape is 19mm wide and each reel is 20m long. The pack contains 6 reels (one each of the following colours: red, black, white, green, blue and yellow).

| Description          | Code | 1+    |
|----------------------|------|-------|
| Insulation tape pack | 2618 | £4.00 |



## 50MM WIDE DOUBLE SIDED TAPE - 33M ROLL

A roll of double sided tape, 50mm wide and 33m long. Ideal for use with our squeeze torch.

| Description                 | Code | 1+    |
|-----------------------------|------|-------|
| 50mm wide double sided tape | 2673 | £4.00 |



## 12 INCH STEEL RULE

Precision made stainless steel ruler with clear imperial and metric markings.

| Description        | Code | 1+    |
|--------------------|------|-------|
| 12 inch steel rule | 2679 | £1.35 |



## DM830D MULTIMETER

The DM830D Multimeter measures DC voltage, AC voltage, current, resistance, diodes, continuity & transistor testing. It has a rubberised protective holder.

|                   |        |
|-------------------|--------|
| Max DC / AC volts | 600V   |
| Max Current       | 10A    |
| Max Resistance    | 2MΩ    |
| Typical accuracy  | ± 1.2% |

| Description       | Code | 1+    |
|-------------------|------|-------|
| DM830D multimeter | 2604 | £8.00 |



## UNI-T DIGITAL AUTO RANGING MULTIMETER UT131A

The UNI-T UT131A Digital Auto-Ranging Multimeter is an ergonomic palm sized fully featured digital multimeter. Features; case, 2 probes, stand, battery included.

|                  |  |
|------------------|--|
| Max DC volts     | 250V                                     |
| Max AC volts     | 250V                                     |
| Max Resistance   | 40MΩ                                     |
| Typical accuracy | ± 0.5% to 4% (depending on reading type) |

| Description                                  | Code  | 1+     |
|--|-------|--------|
| UNI-T Digital Auto Ranging Multimeter UT131A | 26117 | £20.00 |



## VARIABLE OUTPUT POWER SUPPLY

The UTP1303 is a 3A, 32V single-channel linear DC power supply with low ripple/noise, overload protection and constant voltage/current features.

Output variable: 0 to 32V, 3A.

| Description         | Code  | 1+     |
|---------------------|-------|--------|
| Variable output PSU | 26115 | £75.00 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

# 09

# MATERIALS

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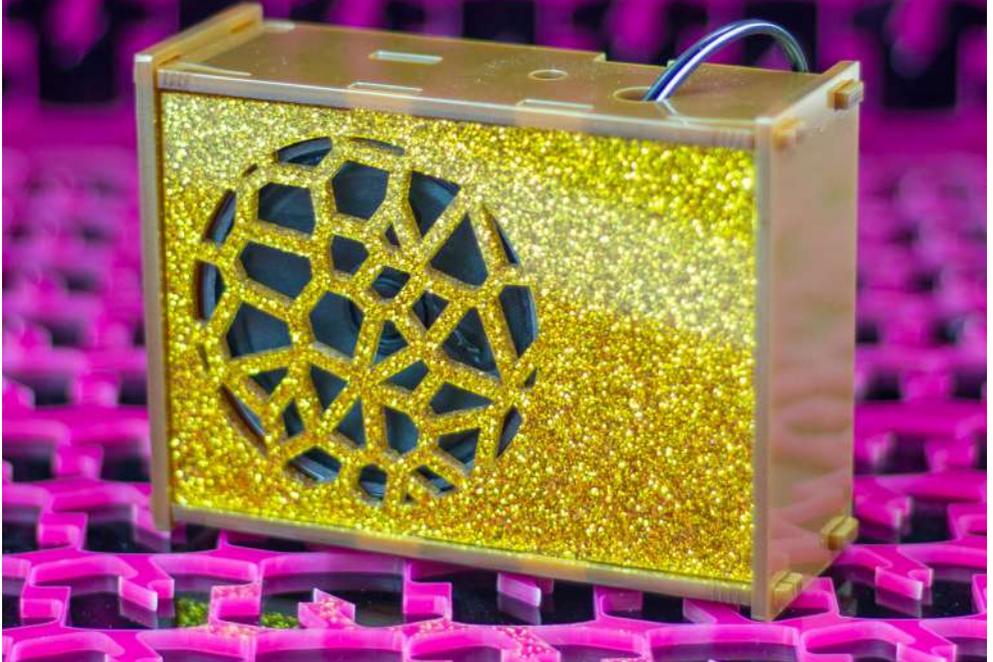
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# AN INTRODUCTION TO ACRYLIC



We stock a wide range of acrylic sheets. Most of these are authentic Perspex® branded sheets which are available in a variety of thicknesses, sheet sizes, finishes and colours.

This choice of sheet sizes means there should be one to suit the bed sizes of the most popular laser cutters and CNC machines.

Perspex® branded sheets are guaranteed for 10 years.

**Looking for more information on how to cut, drill or machine acrylic sheets?**

Why not take a look at our online guides which can be found at:



[www.kitronik.co.uk/materialsguides](http://www.kitronik.co.uk/materialsguides)

## VALUE ACRYLIC

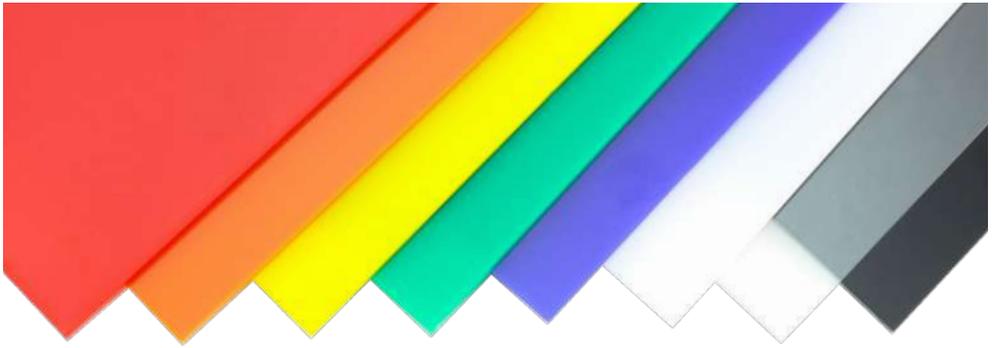
This range of acrylic has been sourced by Kitronik to help your budget go further! Our aim is to provide the best value materials in the UK market. This is a good quality cast acrylic, which cuts similarly to branded materials but is available at a much lower price!

Where there are trade offs is that colours are not as consistent between batches, so for commercial products we would suggest picking the name brand product. However for the majority of uses this value range acrylic is perfect.



[www.kitronik.co.uk/value](http://www.kitronik.co.uk/value)

| Description   | Code  | 1+     | 10+    | 100+  |
|---|-------|--------|--------|-------|
| Black Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm  | 43186 | £4.55  | £4.25  | £4.10 |
| White Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm  | 43187 | £4.55  | £4.25  | £4.10 |
| Red Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm    | 43188 | £4.55  | £4.25  | £4.10 |
| Blue Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm   | 43189 | £4.55  | £4.25  | £4.10 |
| Green Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm  | 43190 | £4.55  | £4.25  | £4.10 |
| Yellow Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm | 43191 | £4.55  | £4.25  | £4.10 |
| Orange Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm | 43192 | £4.55  | £4.25  | £4.10 |
| Clear Value Acrylic Sheet (Cast) - 3mm x 600mm x 400mm  | 43185 | £4.55  | £4.25  | £4.10 |
| Black Value Acrylic Sheets (Cast) - 5mm x 600mm x 400mm | 43198 | £7.40  | £7.00  | £6.75 |
| White Value Acrylic Sheets (Cast) - 5mm x 600mm x 400mm | 43199 | £7.40  | £7.00  | £6.75 |
| Clear Value Acrylic Sheet (Cast) - 5mm x 600mm x 400mm  | 43200 | £7.00  | £6.75  | £6.50 |
| Black Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm   | 43241 | £10.50 | £10.00 | £9.80 |
| White Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm   | 43242 | £10.50 | £10.00 | £9.80 |
| Red Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm     | 43243 | £10.50 | £10.00 | £9.80 |
| Blue Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm    | 43244 | £10.50 | £10.00 | £9.80 |
| Green Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm   | 43245 | £10.50 | £10.00 | £9.80 |
| Yellow Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm  | 43246 | £10.50 | £10.00 | £9.80 |
| Orange Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm  | 43247 | £10.50 | £10.00 | £9.80 |
| Clear Value Acrylic Sheet (Cast) 3mm x 1000mm x 600mm   | 43248 | £10.50 | £10.00 | £9.80 |



**KITRONIK**

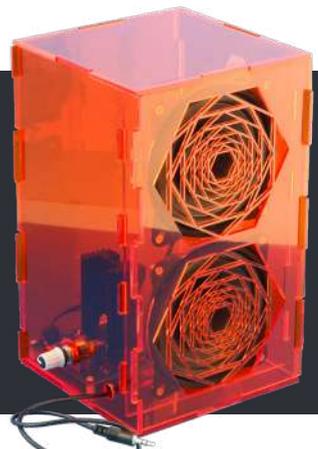
**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## LOOKING FOR INSPIRATION?

Check out our maker tutorials over at:

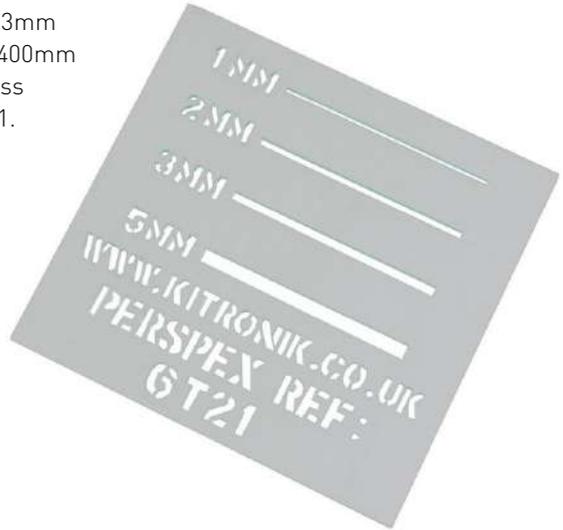


[www.kitronik.co.uk/maker-tutorials](http://www.kitronik.co.uk/maker-tutorials)



## GLASS LOOK CLEAR PERSPEX® SHEET

Glass Look Clear Transparent Perspex 3mm thickness. Sizes: 600mm by 400mm & 400mm by 300mm. Sheets will allow light to pass through clearly. Perspex colour ref 6T21.



| Description                              | Code  | 1+    | 10+   |
|--|-------|-------|-------|
| Glass look Perspex - 3mm x 600mm x 400mm | 43123 | £6.75 | £6.45 |
| Glass look Perspex - 3mm x 400mm x 300mm | 43151 | £3.40 | £3.30 |



## CLEAR PERSPEX®

Clear PERSPEX® sheets have an exceptional light transmission characteristics. They can easily be CNC or laser cut. The 2mm is extruded, there are both extruded and cast versions of 3mm, and the 5mm is cast.

### Nominal

| 1000 x 600 mm | 600 x 400 mm | 600 x 300 mm |
|---------------|--------------|--------------|
|---------------|--------------|--------------|

| Description                | Code  | Sheet  | Code  | Sheet  | Code  | Sheet |
|----------------------------|-------|--------|-------|--------|-------|-------|
| 1mm Extruded (595 x 400mm) |       |        | 43168 | £11.75 |       |       |
| 2mm Extruded               | 4348  | £9.50  | 4346  | £3.80  | 43169 | £4.55 |
| 3mm Extruded               |       |        | 43210 | £5.70  |       |       |
| 2mm Cast                   |       |        | 43171 | £5.50  | 43170 | £4.55 |
| 3mm Cast                   | 4340  | £14.75 | 4345  | £6.00  | 43172 | £5.50 |
| 4mm Cast                   | 43175 | £19.75 | 43174 | £7.95  | 43173 | £6.55 |
| 5mm Cast                   | 4349  | £24.55 | 4347  | £9.85  | 4336  | £8.25 |

## CLEAR PETG

**NEW!**


These Clear PETG Sheets offer excellent light transmission and are extremely durable. They have much better impact resistance than acrylic, have excellent chemical resistance, are easy to work and form, and they are very cost effective.

▼ An example use of the PETG, a laser-cut face shield.

PETG has low forming temperatures so it can easily be heat bent and vacuum or pressure formed, it can withstand a tremendous amount of pressure without cracking. It can also be worked in much the same way as acrylics, in that it can be cut and routed with ease. Also, it meets FDA requirements for food contact and is fully recyclable. Additionally, it can be printed on or painted allowing for imaginative finishes, such as you might see on display stands.


[www.kitronik.co.uk/43217](http://www.kitronik.co.uk/43217)

[www.kitronik.co.uk/43218](http://www.kitronik.co.uk/43218)

[www.kitronik.co.uk/43219](http://www.kitronik.co.uk/43219)

| Description                             | Code  | 1+    | 10+   | 100+  |
|---|-------|-------|-------|-------|
| Clear PETG - 0.5mm x 297mm x 210mm (A4) | 43217 | £0.55 | £0.45 | £0.40 |
| Clear PETG - 1mm x 297mm x 210mm (A4)   | 43218 | £0.95 | £0.85 | £0.75 |
| Clear PETG - 1mm x 600mm x 400mm        | 43219 | £4.15 | £3.65 | £3.45 |

# OPAQUE PERSPEX®

Our full Perspex range **(with extra price breaks!)** can be found online:



[www.kitronik.co.uk/perspex](http://www.kitronik.co.uk/perspex)



## OPAQUE (SOLID) 3MM PERSPEX® ACRYLIC SHEETS



This range of **opaque (solid) coloured cast PERSPEX®** branded sheets will allow no light to pass through making them ideal for a range of design applications. The bulk packs also give a simple way of ordering a range of colours, using a single order code. Laser cutter compatible: These cast sheets are ideal for using with a laser cutter or CNC machine.

### Nominal

| 3MM RANGE         | 1000 x 600mm   |                | 800 x 450mm    |               | 600 x 400mm    |               | 600 x 300mm     |               | 297 x 210mm (A4 size) |               |
|-------------------|----------------|----------------|----------------|---------------|----------------|---------------|-----------------|---------------|-----------------------|---------------|
|                   | Description    | Code Sheet     | Code Sheet     | Code Sheet    | Code Sheet     | Code Sheet    | Code Sheet      | Code Sheet    | Code Sheet            |               |
| Black             | 4305           | £16.30         | 4355           | £10.40        | 4365           | £6.75         | 43275           | £5.65         | 4705                  | £2.25         |
| White             | 4308           | £15.65         | 4358           | £10.00        | 4368           | £6.50         | 43278           | £5.55         | 4708                  | £2.15         |
| Red               | 4301           | £16.30         | 4351           | £10.40        | 4361           | £6.75         | 43271           | £5.65         | 4701                  | £2.25         |
| Orange            | 4306           | £16.30         | 4356           | £10.40        | 4366           | £6.75         | 43276           | £5.65         | 4706                  | £2.25         |
| Yellow            | 4303           | £16.30         | 4353           | £10.40        | 4363           | £6.75         | 43273           | £5.65         | 4703                  | £2.25         |
| Green             | 4304           | £16.30         | 4354           | £10.40        | 4364           | £6.75         | 43274           | £5.65         | 4704                  | £2.25         |
| Blue              | 4302           | £16.30         | 4352           | £10.40        | 4362           | £6.75         | 43272           | £5.65         | 4702                  | £2.25         |
| Purple            | 4309           | £16.30         | 4359           | £10.40        | 4369           | £6.75         | 43279           | £5.65         | 4709                  | £2.25         |
| Pink              | 4307           | £16.30         | 4357           | £10.40        | 4367           | £6.75         | 43277           | £5.65         | 4707                  | £2.25         |
| Brown             | 43155          | £16.30         |                |               | 43154          | £6.75         | 43153           | £5.65         |                       |               |
| Pale Blue         |                |                |                |               | 43119          | £6.75         |                 |               |                       |               |
| Pale Green        |                |                |                |               | 43120          | £6.75         |                 |               |                       |               |
| Grey              |                |                |                |               | 43122          | £6.75         |                 |               |                       |               |
| <b>Bulk pack*</b> | <b>4300-SP</b> | <b>£143.50</b> | <b>4350-SP</b> | <b>£89.50</b> | <b>4360-SP</b> | <b>£57.80</b> | <b>43270-SP</b> | <b>£48.85</b> | <b>4700-SP</b>        | <b>£17.75</b> |

\* Includes one of each colour: Red, blue, yellow, green, black, orange, pink, white & purple

## OPAQUE (SOLID) 5MM PERSPEX® ACRYLIC SHEETS

Nominal

| Description  | 5MM RANGE       |                | Nominal         |               |
|--|-----------------|----------------|-----------------|---------------|
|  | Code            | Sheet          | Code            | Sheet         |
| Black Opaque (solid) 5mm Perspex® acrylic sheet                                  | 43205           | £27.75         | 43265           | £11.15        |
| White Opaque (solid) 5mm Perspex® acrylic sheet                                  | 43208           | £27.25         | 43268           | £11.00        |
| Red Opaque (solid) 5mm Perspex® acrylic sheet                                    | 43201           | £27.75         | 43261           | £11.15        |
| Orange Opaque (solid) 5mm Perspex® acrylic sheet                                 | 43206           | £27.75         | 43266           | £11.15        |
| Yellow Opaque (solid) 5mm Perspex® acrylic sheet                                 | 43203           | £27.75         | 43263           | £11.15        |
| Green Opaque (solid) 5mm Perspex® acrylic sheet                                  | 43204           | £27.75         | 43264           | £11.15        |
| Blue Opaque (solid) 5mm Perspex® acrylic sheet                                   | 43202           | £27.75         | 43262           | £11.15        |
| Purple Opaque (solid) 5mm Perspex® acrylic sheet                                 | 43209           | £27.75         | 43269           | £11.15        |
| Pink Opaque (solid) 5mm Perspex® acrylic sheet                                   | 43207           | £27.75         | 43267           | £11.15        |
| <b>Bulk pack Opaque (solid) 5mm Perspex® acrylic sheets (One of each colour)</b> | <b>43200-SP</b> | <b>£242.00</b> | <b>43260-SP</b> | <b>£97.00</b> |



Extra price breaks can be found online: [www.kitronik.co.uk/perspex](http://www.kitronik.co.uk/perspex)



Check [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for materials delivery charges.

## PERSPEX PROJECT EXAMPLES



[www.kitronik.co.uk/blog/mono-amplifier-kit-balcarass-school](http://www.kitronik.co.uk/blog/mono-amplifier-kit-balcarass-school)



[www.kitronik.co.uk/blog/fm-radio-kit-wisbech-grammar-school](http://www.kitronik.co.uk/blog/fm-radio-kit-wisbech-grammar-school)

A KITRONIK **FREE** RESOURCE

# USING LASER MATERIALS

---

With the wide range of laser materials available at Kitronik, we regularly get asked questions about the materials and the best way to use them. We have created a guide on using laser materials, which covers both Perspex acrylic sheets and laser wood, including MDF, laminated MDF and Plywood, aiming to answer those questions.

The guide includes sections on:

- **SPEED & POWER**
- **VARIATION IN MATERIALS**
- **LASER POWER & CUT DEPTH**
- **CONSISTENT CUTTING**
- **SETTING UP A JOB**
- **CHOOSING THE RIGHT BED**
- **DETECTING ISSUES EARLY**
- **EVERY LASER IS DIFFERENT**

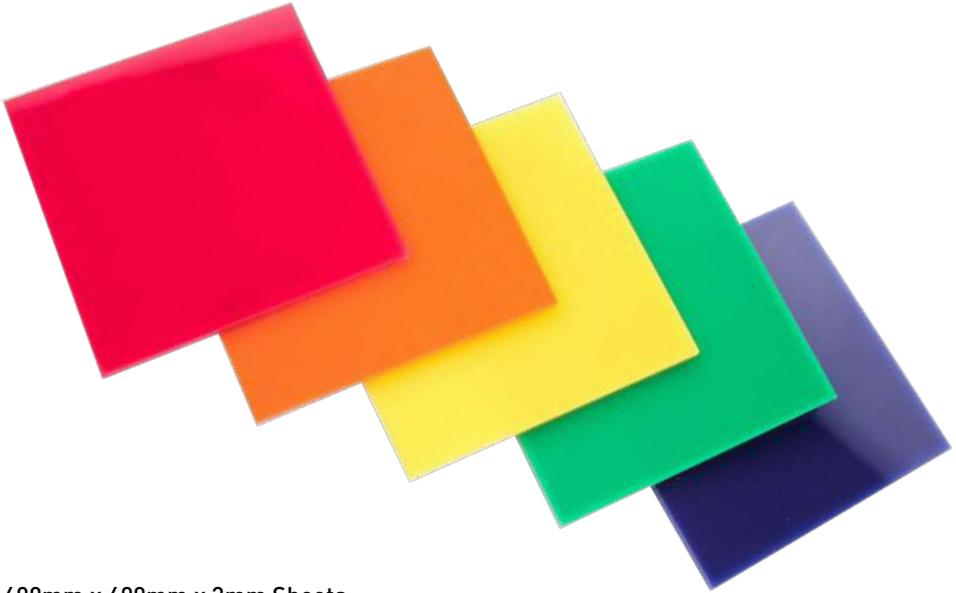


The full Laser Materials guide can be viewed online at:



[www.kitronik.co.uk/laserguide](http://www.kitronik.co.uk/laserguide)

## GREENCAST ACRYLIC SHEETS



### 600mm x 400mm x 3mm Sheets

These 100% recycled premium quality Greencast Acrylic Sheets are made from 100% recycled MMA, making it extremely environmentally friendly. What's more, at the end of its life, they can be recycled again!

They look, perform, fabricate and lasts as long as standard virgin acrylics. They are also free from volatile organic compounds and hydrofluorocarbons. The protection film is PVC free and safe for laser cutting.



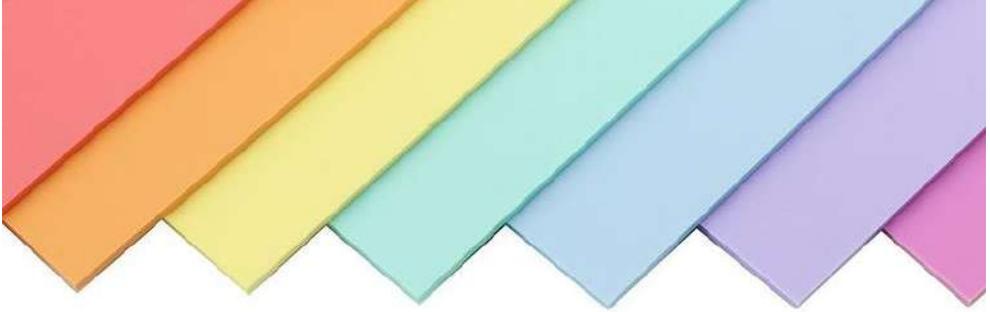
Colours: [www.kitronik.co.uk/43236](http://www.kitronik.co.uk/43236)



Clear: [www.kitronik.co.uk/43121](http://www.kitronik.co.uk/43121)

| Description                            | Code              | 1+    | 10+   |
|--|-------------------|-------|-------|
| Greencast Blue - 3mm x 600mm x 400mm   | <b>NEW!</b> 43236 | £8.20 | £7.85 |
| Greencast Green - 3mm x 600mm x 400mm  | <b>NEW!</b> 43237 | £8.20 | £7.85 |
| Greencast Red - 3mm x 600mm x 400mm    | <b>NEW!</b> 43238 | £8.20 | £7.85 |
| Greencast Yellow - 3mm x 600mm x 400mm | <b>NEW!</b> 43239 | £8.20 | £7.85 |
| Greencast Orange - 3mm x 600mm x 400mm | <b>NEW!</b> 43240 | £8.20 | £7.85 |
| Greencast White - 3mm x 600mm x 400mm  | 43196             | £7.75 | £7.45 |
| Greencast Black - 3mm x 600mm x 400mm  | 43197             | £8.30 | £7.95 |
| Greencast Clear - 3mm x 600mm x 400mm  | 43121             | £6.15 | £5.85 |

## PERSPEX® SWEET PASTELS

**NEW!**


### 3mm x 600mm x 400mm Sheets

These 3mm Sweet Pastels Sheets are our yummiest and most vibrant acrylic range to date. Even the names will make your mouth water! Sweet Pastels also have all of the excellent physical properties of standard cell cast acrylic sheets so they can be used for all of the same applications.

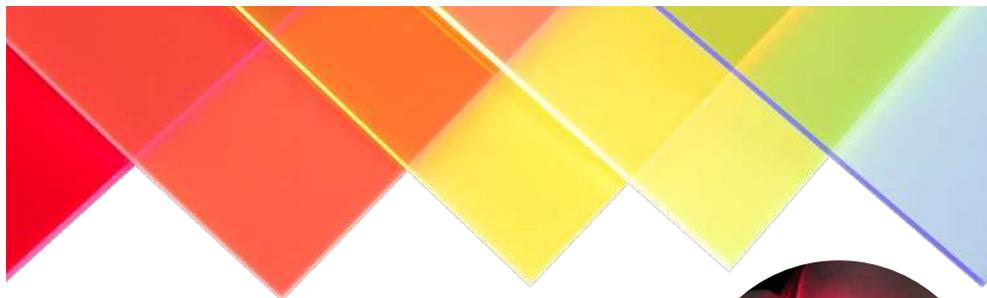
They are suitable for both laser cutting and working by hand. The sheets feature a Matt finish on one side and a Gloss finish on the other, providing the best of both worlds in a single sheet. The sheets are opaque and thus have low levels of light transmission. They are also as strong and durable as regular acrylics, making them suitable for the most demanding of needs.



 [www.kitronik.co.uk/43249](http://www.kitronik.co.uk/43249)

| Description                             | Code  | 1+    | 10+   |
|---|-------|-------|-------|
| Lemon Bon Bon - 3mm x 600mm x 400mm     | 43249 | £7.95 | £7.70 |
| Raspberry Sherbet - 3mm x 600mm x 400mm | 43250 | £7.95 | £7.70 |
| Spearmint Green - 3mm x 600mm x 400mm   | 43251 | £7.95 | £7.70 |
| Candy Floss Blue - 3mm x 600mm x 400mm  | 43252 | £7.95 | £7.70 |
| Orange Fizz - 3mm x 600mm x 400mm       | 43289 | £7.95 | £7.70 |
| Parma Violet - 3mm x 600mm x 400mm      | 43291 | £7.95 | £7.70 |
| Sour Grapes - 3mm x 600mm x 400mm       | 43292 | £7.95 | £7.70 |

## FLUORESCENT PERSPEX®



These PERSPEX® branded fluorescent sheets have an edge that appears to glow under ambient light which can be used to create very striking designs. These sheets are all manufactured using the cast method and are guaranteed for 10 years.



[www.kitronik.co.uk/fluorescent](http://www.kitronik.co.uk/fluorescent)

| 3MM RANGE                                |                | 1000 x 600 mm |        | 600 x 400 mm   |               |       | A4 or 300 x 200 mm |               |
|--|----------------|---------------|--------|----------------|---------------|-------|--------------------|---------------|
| Description                              | Code           | 1+            | 10+    | Code           | 1+            | 10+   | Code               | 1+            |
| Mars red                                 | 4331           | £17.00        | £16.70 | 4381           | £7.25         | £6.85 | 4711               | £2.75         |
| Lava orange                              | 4332           | £17.00        | £16.70 | 4382           | £7.25         | £6.85 | 4712               | £2.75         |
| Helios yellow                            | 4333           | £17.00        | £16.70 | 4383           | £7.25         | £6.85 | 4713               | £2.75         |
| Acid green                               | 4334           | £17.00        | £16.70 | 4384           | £7.25         | £6.85 | 4714               | £2.75         |
| Neptune blue                             | 4335           | £17.00        | £16.70 | 4385           | £7.25         | £6.85 | 4715               | £2.75         |
| <b>Bulk pack</b><br>(One of each colour) | <b>4330-FP</b> | <b>£83.00</b> |        | <b>4380-FP</b> | <b>£34.00</b> |       | <b>4710-FP</b>     | <b>£13.00</b> |

| 5MM RANGE                                |                 | 600 x 400 mm  |        |  |
|--|-----------------|---------------|--------|--|
| Description                              | Code            | 1+            | 10+    |  |
| Mars red                                 | 43281           | £11.95        | £11.35 |  |
| Lava orange                              | 43282           | £11.95        | £11.35 |  |
| Helios yellow                            | 43283           | £11.95        | £11.35 |  |
| Acid green                               | 43284           | £11.95        | £11.35 |  |
| Neptune blue                             | 43285           | £11.95        | £11.35 |  |
| <b>Bulk pack</b><br>(One of each colour) | <b>43280-FP</b> | <b>£56.00</b> |        |  |

## TRANSPARENT CAST 3MM PERSPEX® ACRYLIC SHEETS



Transparent sheets will allow light to pass through clearly, enabling objects to be distinguished through the material.

### Laser cutter compatible

These cast sheets are ideal for using with a laser cutter or CNC machine and are available in a range of sheet sizes to suit your machine.

| Description                              | Nominal        |               |        |                 |               |       |
|--|----------------|---------------|--------|-----------------|---------------|-------|
|  | 1000 x 600 mm  |               |        | 600 x 400 mm    |               |       |
|  | Code           | 1+            | 10+    | Code            | 1+            | 10+   |
| Red                                      | 4321           | £16.55        | £16.25 | 43221           | £6.75         | £6.45 |
| Blue                                     | 4322           | £16.55        | £16.25 | 43222           | £6.75         | £6.45 |
| Green                                    | 4323           | £16.55        | £16.25 | 43223           | £6.75         | £6.45 |
| Amber                                    | 4324           | £16.55        | £16.25 | 43224           | £6.75         | £6.45 |
| Neutral (grey)                           | 4325           | £16.55        | £16.25 | 43225           | £6.75         | £6.45 |
| <b>Bulk pack</b><br>(One of each colour) | <b>4320-TP</b> | <b>£81.00</b> |        | <b>43220-TP</b> | <b>£33.00</b> |       |

VISIT OUR WEBSITE FOR MORE **FREE GUIDES** ON

## CUTTING & WORKING WITH PERSPEX



[www.kitronik.co.uk/materialsguides](http://www.kitronik.co.uk/materialsguides)



There is a once per order delivery charge for some of our material sheets. Check [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for relevant delivery charges.

A KITRONIK **FREE** RESOURCE

# BUILDING YOUR OWN PERSPEX BOX



This is a basic laser cutting guide detailing how to make a simple Perspex Box. It is the first in a series of resources designed as an introduction to using a laser cutter.

Sometimes, the best way to house a project is a simple box. There are some great online tools to help you design your box, but for the sake of doing it all in one place, we chose to use a free program to design ours.



[www.kitronik.co.uk/laser-box](http://www.kitronik.co.uk/laser-box)

## PERSPEX STAG – THE JUDD SCHOOL



A GCSE student from The Judd School in Kent has come up with a very effective way of showing one of the many ways Perspex is used in Schools in the form of a 3D stag trophy head.

This stag trophy head was designed as a GCSE project which we think you'll agree looks stunning. It features Clear Frosted Perspex that was laser cut. It has been designed meticulously and is lit up with a strip of LEDs underneath to highlight the outline of the sculpture.

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## FROSTED 3MM PERSPEX® ACRYLIC SHEETS



These sheets have a double sided matt finish which gives an effect that is similar to sand blasted or etched glass. All of these sheets let light through, but the midnight black and moonlight white ones are opaque.

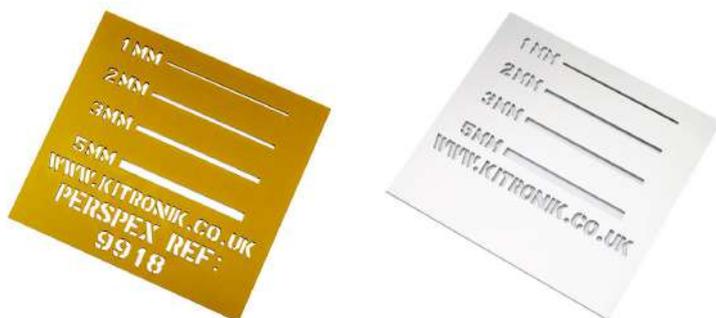
1000 x 600 mm

600 x 400 mm

| Description     | 1000 x 600 mm |        | 600 x 400 mm |       |
|-----------------|---------------|--------|--------------|-------|
|                 | Code          | Sheet  | Code         | Sheet |
| Frosted white   | 4392          | £18.45 | 4391         | £7.50 |
| Chilli red      | 43107         | £18.70 | 43112        | £7.80 |
| Lime zest       | 43117         | £18.70 | 43118        | £7.80 |
| Sapphire blue   | 43109         | £18.70 | 43114        | £7.80 |
| Midnight black  | 43139         | £18.70 | 43137        | £7.80 |
| Moonlight white | 43149         | £18.70 | 43138        | £7.80 |
| Citrus yellow   | 43106         | £18.70 | 43111        | £7.80 |
| Grey            | 43110         | £18.70 | 43115        | £7.80 |

## 3MM METALLIC PERSPEX® SHEETS

Metallic finish Perspex acrylic sheets. The gorgeous metallic finish makes them ideal for luxurious looking applications. Both sides of the sheets have a high gloss finish.



1000 x 500 mm

600 x 400 mm

600 x 300 mm

300 x 200 mm

| Description | 1000 x 500 mm |        | 600 x 400 mm |        | 600 x 300 mm |        | 300 x 200 mm |       |
|-------------|---------------|--------|--------------|--------|--------------|--------|--------------|-------|
|             | Code          | Sheet  | Code         | Sheet  | Code         | Sheet  | Code         | Sheet |
| Silver      | 43102         | £32.00 | 4337         | £18.95 | 4338         | £11.95 | 4339         | £3.95 |
| Gold        | 43103         | £32.00 | 4317         | £18.95 | 4316         | £11.95 | 43184        | £3.95 |



## MIRROR ACRYLIC SHEETS

Mirrored acrylic sheets make an excellent alternative to glass mirrors. Shatter proof, mar-resistant and stronger than glass, they can be used in a wide range of products and applications. These sheets are made from extruded acrylic and the mirror effect is applied to one face. They can be machined and laser cut like normal acrylic sheets. As acrylic mirrors are more flexible than glass they must be fixed to a flat wall/surface. If you are fitting it to a wall which is not flat, it is best to fit it first to something rigid such as a piece of MDF.

| Description   | Code  | 1+     | 10+    |
|---|-------|--------|--------|
| Mirror extruded perspex sheet – 3mm x 800mm x 600mm | 43148 | £21.75 | £21.35 |
| Mirror extruded perspex sheet – 3mm x 600mm x 400mm | 4393  | £11.25 | £10.85 |
| Mirror extruded perspex sheet – 3mm x 400mm x 300mm | 43152 | £5.65  | £5.45  |

## COLOURED MIRRORED ACRYLIC

We stock a vibrant range of coloured acrylic mirror sheets from Plaskolite\*. Made from extruded acrylic sheet, each mirror is protected by the industry's toughest, most durable backing. All coloured acrylic mirror is covered by a protective laserable film.


[www.kitronik.co.uk/mirror](http://www.kitronik.co.uk/mirror)

\*Excluding Rose Gold



| Description  | Code  | 1+     | 10+    |
|--|-------|--------|--------|
| Red mirrored acrylic sheet – 3mm x 600mm x 400mm       | 43132 | £23.10 | £22.50 |
| Purple mirrored acrylic sheet – 3mm x 600mm x 400mm    | 43133 | £23.10 | £22.50 |
| Gold mirrored acrylic sheet – 3mm x 600mm x 400mm      | 43134 | £23.10 | £22.50 |
| Bronze mirrored acrylic sheet – 3mm x 600mm x 400mm    | 43135 | £23.10 | £22.50 |
| Green mirrored acrylic sheet – 3mm x 600mm x 400mm     | 43136 | £23.10 | £22.50 |
| Rose Gold mirrored acrylic sheet – 3mm x 600mm x 400mm | 4319  | £19.50 | £19.00 |

## KITRONIK GLITTER RANGE ACRYLIC SHEETS

Kitronik Glitter Acrylic is a stunning and simple product. High quality cast acrylic with beautiful flecks of coloured glitter running through them. Perfect for making your projects stand out, simple designs can really shine with this sparkling product.



- ^ Close-up of the acrylic's glitter effect (43158).
- < An example of a laser cut project made using one of the glitter sheets.



All sheet sizes 600 x 400mm

| Description                         | Code  | 1+     |
|-------------------------------------|-------|--------|
| 3mm Red Glitter Sheet (Cast)        | 43158 | £14.95 |
| 3mm Orange Glitter Sheet (Cast)     | 43160 | £14.95 |
| 3mm Green Glitter Sheet (Cast)      | 43161 | £14.95 |
| 3mm Light Blue Glitter Sheet (Cast) | 43162 | £14.95 |
| 3mm Hot Pink Glitter Sheet (Cast)   | 43164 | £14.95 |
| 3mm Silver Glitter Sheet (Cast)     | 43166 | £14.95 |
| 3mm Gold Glitter Sheet (Cast)       | 43167 | £14.95 |



### GLITTER ACRYLIC PROJECT IDEAS

Combining Kitronik Glitter Acrylic with other materials and lighting can make really impressive objects where just a little material can make a big impact and give an excellent level of finish.

Find more examples on our blog: [www.kitronik.co.uk/pumpkin](http://www.kitronik.co.uk/pumpkin)



## ACRYLIC BUBBLE ROD - 495MM LENGTH

Bubble rod is a really good material to use in ornamental lighting projects. When an LED is placed at the end of the rod the whole rod is illuminated and the bubbles contained within the rod give it a great look. Whilst any bright LEDs can be used, colour changing LEDs give a constantly changing feature.

The bubble rod is available in a choice of sizes. All are 495mm in length.

| Diameter | Code | 1+    |
|----------|------|-------|
| 6mm      | 4901 | £0.75 |
| 10mm     | 4902 | £1.25 |
| 15mm     | 4903 | £1.65 |



## ACRYLIC ROD - 495MM LENGTH

The acrylic rod is a solid acrylic cylinder, which can be illuminated by LEDs. The rod is available in a choice of sizes. All are 495mm in length.

| Diameter | Code | 1+    |
|----------|------|-------|
| 6mm      | 4904 | £0.70 |
| 10mm     | 4905 | £0.95 |
| 15mm     | 4906 | £1.65 |



## ACRYLIC TUBE - 495MM LENGTH

This hollow tube is available in two sizes. Both are 495mm length.

The 8mm outer diameter has a 1mm wall thickness and a 6mm internal diameter.

The 16mm outer diameter has a 2mm wall thickness and a 12mm internal diameter.

| Diameter | Code | 1+    |
|----------|------|-------|
| 8mm      | 4907 | £0.70 |
| 16mm     | 4908 | £1.20 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## LASER ENGRAVING LAMINATE SHEETS

These 1.5mm Laser Engraving Laminate sheets have a solid base layer, with a contrasting layer on the surface. These materials cut and engrave well on a laser cutter and when engraved, the top layer gives way to the contrasting colour underneath to decorative effect.



All sheet sizes 600 x 400mm

[www.kitronik.co.uk/laminates](http://www.kitronik.co.uk/laminates)

| Description                                    | Code  | 1+     |
|--|-------|--------|
| Black on White Laser Engraving Laminate sheet  | 43211 | £11.75 |
| White on Black Laser Engraving Laminate sheet  | 43212 | £11.75 |
| Red on White Laser Engraving Laminate sheet    | 43213 | £11.75 |
| Blue on White Laser Engraving Laminate sheet   | 43214 | £11.75 |
| Yellow on Black Laser Engraving Laminate sheet | 43215 | £11.75 |
| Gold on Black Laser Engraving Laminate sheet   | 43216 | £11.75 |

## PERSPEX® DUO ACRYLIC SHEETS

Duo from Perspex is a black sheet of acrylic with a thin metallic layer, allowing the black to be exposed when etched.

Perspex Duo offers two beautiful effects in just one product - a metallic sparkle that contrasts elegantly with a rich black. The metallic pigment gives it a lovely lustrous sheen whose vibrancy is further enhanced under strong lighting.



[www.kitronik.co.uk/4329](http://www.kitronik.co.uk/4329)

[www.kitronik.co.uk/4330](http://www.kitronik.co.uk/4330)

All sheet sizes 600 x 400mm

| Description                                  | Code | 1+     |
|--|------|--------|
| Gold & Black Perspex Duo Acrylic Sheet 3mm   | 4329 | £11.20 |
| Silver & Black Perspex Duo Acrylic Sheet 3mm | 4330 | £11.20 |

## DRY ERASE & CHALKBOARD ACRYLIC SHEETS

These new laser acrylic sheets can be laser cut and UV printed to create custom whiteboards and blackboards for the home, workplace or in the classroom!



### WHITE LASER DRY ERASE BOARD

Create custom whiteboards with these white laser, dry erase, acrylic boards measuring 1.5mm x 600mm x 400mm. Can be worked & thermoformed like regular acrylics.



[www.kitronik.co.uk/43194](http://www.kitronik.co.uk/43194)

| Description                         | Code  | 1+    |
|-------------------------------------|-------|-------|
| White Laser Dry Erase Acrylic Board | 43194 | £9.50 |

### CHALK BOARD EFFECT LASER ACRYLIC SHEET

Create custom black boards with these chalk board effect laser acrylic sheets measuring 1.5mm x 600mm x 400mm. Can be worked & thermoformed like regular acrylics.



[www.kitronik.co.uk/43195](http://www.kitronik.co.uk/43195)

| Description                            | Code  | 1+     |
|--|-------|--------|
| Chalk Board Effect Laser Acrylic Sheet | 43195 | £18.00 |

## HIPS (HIGH IMPACT POLYSTYRENE SHEETS)

Our range of High Impact Polystyrene Sheets (HIPS) is available in seven different colours and in two different thicknesses (1mm and 1.5mm). Sheet sizes are 457mm by 254mm.

HIPS are a highly versatile product that have many uses and can be worked easily with standard workshop tools. They are very tough, rigid and highly resistant to impact, making them a very hard wearing material. The sheets can easily be routed, sawn, punched, drilled, guillotined, thermoformed or vacuum formed.



 [www.kitronik.co.uk/hips](http://www.kitronik.co.uk/hips)

### Sheet size

| Description                              | 1mm x 457mm x 254mm |              |       | 1.5mm x 457mm x 254mm |               |       |
|--|---------------------|--------------|-------|-----------------------|---------------|-------|
|  | Code                | 1+           | 50+   | Code                  | 1+            | 50+   |
| Black                                    | 5701                | £0.95        | £0.90 | 5711                  | £1.40         | £1.35 |
| White                                    | 5702                | £0.95        | £0.90 | 5712                  | £1.40         | £1.35 |
| Red                                      | 5703                | £1.10        | £1.05 | 5713                  | £1.60         | £1.55 |
| Blue                                     | 5704                | £1.10        | £1.05 | 5714                  | £1.60         | £1.55 |
| Green                                    | 5705                | £1.10        | £1.05 | 5715                  | £1.60         | £1.55 |
| Yellow                                   | 5706                | £1.10        | £1.05 | 5716                  | £1.60         | £1.55 |
| Purple                                   | 5707                | £1.10        | £1.05 | 5717                  | £1.60         | £1.55 |
| <b>Bulk pack</b><br>(One of each colour) | <b>5700-SP</b>      | <b>£7.20</b> |       | <b>5710-SP</b>        | <b>£10.55</b> |       |



Check [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for materials delivery charges.

## GREY LASER COMPATIBLE RUBBER SHEETS

These 2.3mm Grey Laser Compatible Rubber A4 sheets are highly versatile and are the perfect choice for using with a laser cutter. When cut it produces no harmful gasses and it is very low odour (unlike most types of rubber). It can be engraved and cut with any type of CO2 laser and offers outstanding engraving and impression quality.

Although it has a number of potential uses, its high resistance to alcohol and water-based inks makes it the ideal choice for making custom rubber stamps. Other possible uses include making custom seals, rubber feet, protective strips and even durable external decorations for projects.



[www.kitronik.co.uk/5510](http://www.kitronik.co.uk/5510)

| Description                                   | Code | 1+     | 10+    |
|---|------|--------|--------|
| 2.3mm Grey Laser Compatible Rubber – A4 sheet | 5510 | £11.95 | £10.95 |

CHECK OUT OUR  
WORKING WITH  
MATERIALS  
RESOURCES!

Check out our blogs on working with materials over at:



<https://kitronik.co.uk/blogs/resources/working-with-materials>

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## TRANSPARENT POLYPROPYLENE

**NEW!**


### 0.5mm x 750mm x 1050mm Sheets

These translucent/transparent coloured 0.5mm Polypropylene Sheets are suitable for a wide range of D&T applications. These sheets let light through but have a pinseal finish on one side, which is good for diffusing light.



[www.kitronik.co.uk/43226](http://www.kitronik.co.uk/43226)

| Description                      | Code  | 1+    | 50+   |
|----------------------------------|-------|-------|-------|
| Transparent Polypropylene Blue   | 43226 | £2.30 | £2.10 |
| Transparent Polypropylene Yellow | 43227 | £2.30 | £2.10 |
| Transparent Polypropylene Green  | 43228 | £2.30 | £2.10 |
| Transparent Polypropylene Pink   | 43229 | £2.30 | £2.10 |

## FLUTED POLYPROPYLENE



These 4mm fluted polypropylene sheets measuring 610mm x 610mm can easily be worked by hand and cut with a laser cutter. These lightweight and competitively priced sheets are used across a broad section of industries for an equally wide number of different applications. They are available as a 10 pack in a variety of different colours; white, black, yellow, red, blue, and green. here is also a mixed pack which comprises, 1 each of black and white and 2 of each of the remaining colours.



[www.kitronik.co.uk/43254](http://www.kitronik.co.uk/43254)

**4mm x 610mm x 610mm Sheet - Pack of 10**

| Description   | Code  | 1+     |
|---|-------|--------|
| Fluted Polypropylene White - Pack of 10                         | 43254 | £18.00 |
| Fluted Polypropylene Black - Pack of 10                         | 43255 | £20.00 |
| Fluted Polypropylene Yellow - Pack of 10                        | 43256 | £20.00 |
| Fluted Polypropylene Red - Pack of 10                           | 43257 | £20.00 |
| Fluted Polypropylene Blue - Pack of 10                          | 43258 | £20.00 |
| Fluted Polypropylene Green - Pack of 10                         | 43259 | £20.00 |
| Fluted Polypropylene Mixed - 1 Black, 1 White, 2 of each Colour | 43288 | £20.00 |

## POLYPROPYLENE SHEETS

Our Polypropylene Sheets are suitable for a wide range of design applications. They are available in a range of opaque colours and also in transparent with either a frost or translucent clear finish. The thin gauges make the sheets flexible and therefore ideal for products requiring a curved finish.

### Working with this material

These sheets can be cut safely on a laser cutter (please note the edges will be slightly 'burred' and do not appear 'polished' like Perspex) and unlike PVC they do not create any chlorine gas. The sheets can also be cut using a sharp knife. You can crease the material using a cold or hot creasing technique. The resulting 'hinges' can be folded many times without the material breaking.



[www.kitronik.co.uk/polypropylene](http://www.kitronik.co.uk/polypropylene)

| Description  | Code  | 1+    | 10+   | 50+   | 100+  |
|--|-------|-------|-------|-------|-------|
| 0.8mm White, fine sand/sand finish, 1100mm x 650mm     | 43124 | £4.30 |       | £4.00 |       |
| 0.8mm Yellow, fine sand/sand finish, 1100mm x 650mm    | 43125 | £4.30 |       | £4.00 |       |
| 0.8mm Red, fine sand/sand finish, 1100mm x 650mm       | 43126 | £4.30 |       | £4.00 |       |
| 0.8mm Aqua Blue, fine sand/sand finish, 1100mm x 650mm | 43127 | £4.30 |       | £4.00 |       |
| 0.8mm Green, fine sand/sand finish, 1100mm x 650mm     | 43128 | £4.30 |       | £4.00 |       |
| 0.8mm Black, fine sand/sand finish, 1100mm x 650mm     | 43129 | £4.30 |       | £4.00 |       |
| 0.8mm Translucent, gloss finish, 1100mm x 650mm        | 43130 | £4.30 |       | £4.00 |       |
| 0.73mm Frosted, fine sand/sand finish, 1100mm x 650mm  | 43131 | £4.30 |       | £4.00 |       |
| 0.5mm Frosted, 1100mm x 650mm                          | 43140 | £2.50 |       | £2.30 |       |
| 0.5mm Black, 1050mm x 750mm                            | 43141 | £2.50 |       | £2.30 |       |
| 0.5mm White, 1020mm x 720mm                            | 43142 | £2.50 |       | £2.30 |       |
| 0.5mm Red, 1050mm x 750mm                              | 43144 | £2.50 |       | £2.30 |       |
| 0.5mm Blue, 1050mm x 750mm                             | 43145 | £2.50 |       | £2.30 |       |
| 0.5mm Green, 1050mm x 750mm                            | 43146 | £2.50 |       | £2.30 |       |
| 0.5mm Yellow, 1050mm x 750mm                           | 43147 | £2.50 |       | £2.30 |       |
| 0.5mm Black, 500mm x 350mm                             | 43176 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm Frosted, 500mm x 350mm                           | 43177 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm Navy Blue, 500mm x 350mm                         | 43178 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm White, 500mm x 350mm                             | 43179 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm Red, 500mm x 350mm                               | 43180 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm Yellow, 500mm x 350mm                            | 43181 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm Royal Blue, 500mm x 350mm                        | 43182 | £1.50 | £0.85 |       | £0.65 |
| 0.5mm Green, 500mm x 350mm                             | 43183 | £1.50 | £0.85 |       | £0.65 |

## GREY STYROFOAM SHEETS

These highly versatile Craft Foam Styrofoam Sheets measure 25mm x 600mm x 600mm and 50mm x 600mm x 600mm. Though rigid and strong, these Craft Foam Styrofoam Sheets are very lightweight and can easily be cut and shaped, making them popular with professionals and hobbyists alike.

Styrofoam has a very high weight to strength ratio and has high mechanical strength in compression, tension bending and shear whilst still being very light. It is also an excellent thermal insulator and resistant to water and vapour. The ease with which these sheets can be shaped makes them ideal for model making, building fast prototypes, planning architectural structures, children's art and making moulds for vacuum forming, to name but a few.

As well as basic cutting and shaping these sheets can be further shaped by sawing, drilling or routing and once it has been shaped, you can easily apply a professional finish with resins and paints.



**i** Ordering these items will incur the **once per order delivery charge** for materials (in most UK locations this is £6.50).

Visit [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for more information.

**e** [www.kitronik.co.uk/craftfoam](http://www.kitronik.co.uk/craftfoam)

| Description  | Code | 1+     |
|--|------|--------|
| Grey craft foam Styrofoam sheet – 25mm x 600mm x 600mm | 5507 | £6.25  |
| Grey craft foam Styrofoam sheet – 50mm x 600mm x 600mm | 5508 | £12.50 |

**i** There is a once per order delivery charge for some of our material sheets. Check [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for relevant delivery charges.

## SMART MATERIALS – THERMOCHROMIC LIQUID CRYSTAL

These heat sensitive products make for an excellent demonstration of Smart Materials. We offer a wide range of products to suit all budgets with products that you can use for simple experiments or far more complex ones measuring thermal conductivity of materials.

Each of these sheets contains Thermochromic Liquid Crystals which change colour in reaction to heat, due to the way their molecules twist and interact with light in different ways.

### THERMOMETER STRIPS - 12 TO 32 DEGREES

76mm x 6mm Temperature Strips. An economical way to teach smart materials with examples, these thermometer strips are perfect for the job.

| Description                      | Code | 1+    | 10+   | 100+  |
|----------------------------------|------|-------|-------|-------|
| Thermochromic Thermometer Strips | 2064 | £1.00 | £0.90 | £0.50 |



### LIQUID LEVEL INDICATOR STRIP

Flexible, durable and adhesive-backed Thermochromic strip that changes colour depending on temperature differential between liquid and gases within containers.

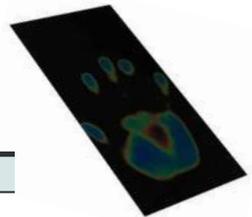
| Description                         | Code | 1+    | 10+   | 100+  |
|-------------------------------------|------|-------|-------|-------|
| Thermochromic Temperature Indicator | 2066 | £3.45 | £2.95 | £2.45 |



### THERMOCHROMIC SHEET - 300 x 150MM

These Thermochromic Sheets, 300mm x 150mm provide an exciting way to see thermal mapping changes through colour. They are supplied with an adhesive backing. Can be cut with scissors.

| Description                       | Code | 1+    | 10+   | 100+  |
|-----------------------------------|------|-------|-------|-------|
| Thermochromic Sheet - 300 x 150mm | 2065 | £8.45 | £7.75 | £7.05 |



### THERMAL CONDUCTIVITY BAR

The thermal conductivity set comprises four metal bars that can be used to demonstrate the differences in thermal conductivity between the different materials.

| Description                          | Code | 1+     | 5+     |
|--------------------------------------|------|--------|--------|
| Thermosmart Thermal Conductivity Bar | 2067 | £26.95 | £24.95 |



## SMART MATERIALS – POLYMORPH THERMOSET PLASTIC



Polymorph is a very popular smart material that has Educational and practical uses. It is a thermoplastic with a low melting temperature and a long working time. Students and crafters can create a huge range of useful products, using it for decorative and practical items.

It is a reusable thermoplastic polymer with a low melting point. The pellets fuse together, soften and turn transparent when heated to over 62°C allowing users to easily shape the polymer by hand! It hardens to a solid, white, non-brittle, strong material that truly has unlimited possibilities. It has no shelf-life and is fully biodegradable.

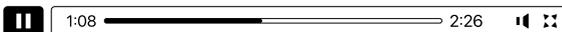


| Description                                  | Code | 1+     | 10+    | 100+  |
|--|------|--------|--------|-------|
| Smart Materials Range - Polymorph, 100g Pack | 4376 | £3.99  | £3.69  | £2.99 |
| Smart Materials Range - Polymorph, 500g Pack | 4378 | £12.95 | £11.75 | £9.95 |



< You can see the video (left) and view full information for this product at the following link:

[www.kitronik.co.uk/4376](http://www.kitronik.co.uk/4376)



**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

# WE ARE COMMITTED TO SUSTAINABILITY

Kitronik is committed to providing as many sustainable products as possible. Where possible Kitronik aim to source wood products that are FSC or PEFC approved from a supplier who is a certified 'Responsible Timber Purchaser'. FSC (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forest Certification) are both schemes that promote sustainable forest management.

The schemes focus on growing and harvesting timber sustainably, providing valuable income and work opportunities for local workers, whilst conserving the forest and natural habitats for future generations.

Look out for these icons:



Find out more about the FSC and PEFC schemes online:



[www.kitronik.co.uk/fsc](http://www.kitronik.co.uk/fsc)



[www.kitronik.co.uk/pefc](http://www.kitronik.co.uk/pefc)

## PLYWOOD

A popular choice due to its sturdy construction, Plywood was one of the first composite materials used in construction, and is a great example of a manufactured timber product. Our Plywoods are from sustainable sources and provide an excellent case study for Sources and Origins. All of our plywood uses interior glue, making them ideal for laser cutting.



| Description                      |  | Code  | 1+    | 10+   | 100+  | 250+  |
|----------------------------------|--|-------|-------|-------|-------|-------|
| 3mm Poplar, 300mm x 200mm        |  | 3272  | £0.80 | £0.75 | £0.70 | £0.68 |
| 3mm Birch, 300mm x 200mm         |  | 3271  | £1.15 | £1.10 | £1.05 | £1.00 |
| 6mm Birch, 300mm x 200mm         |  | 3281  | £0.95 | £0.90 | £0.85 | £0.80 |
| 4mm Poplar, 400mm x 300mm        |  | 32141 | £1.95 | £1.85 | £1.75 | £1.65 |
| 6mm Poplar, 400mm x 300mm        |  | 32147 | £2.35 | £2.20 | £2.05 | £1.90 |
| 9mm Birch, 500mm x 380mm         |  | 32152 | £4.40 | £4.10 | £3.90 | £3.70 |
| 3mm Poplar, 600mm x 300mm        |  | 3224  | £2.30 | £2.15 | £2.05 | £1.95 |
| 3mm Birch, 600mm x 300mm         |  | 3244  | £3.45 | £3.25 | £3.15 | £3.05 |
| 4mm Poplar, 600mm x 300mm        |  | 3267  | £2.70 | £2.50 | £2.40 | £2.30 |
| 4mm Economy Birch, 600mm x 300mm |  | 32133 | £3.60 | £3.45 | £3.30 | £3.10 |
| 5mm Birch, 600mm x 300mm         |  | 32138 | £3.60 | £3.45 | £3.30 | £3.10 |
| 6mm Poplar, 600mm x 300mm        |  | 3225  | £3.50 | £3.30 | £3.10 | £2.90 |
| 3mm Poplar, 600mm x 400mm        |  | 3209  | £3.00 | £2.80 | £2.70 | £2.60 |
| 3mm Birch, 600mm x 400mm         |  | 3201  | £4.55 | £4.40 | £4.25 | £4.10 |
| 4mm Poplar, 600mm x 400mm        |  | 3261  | £3.80 | £3.60 | £3.40 | £3.20 |
| 4mm Economy Birch, 600mm x 400mm |  | 3286  | £4.90 | £4.60 | £4.40 | £4.20 |
| 5mm Birch, 600mm x 400mm         |  | 32139 | £4.40 | £4.20 | £4.00 | £3.90 |
| 6mm Birch, 600mm x 400mm         |  | 3202  | £4.15 | £4.00 | £3.90 | £3.80 |
| 6mm Poplar, 600mm x 400mm        |  | 3210  | £4.45 | £4.30 | £4.15 | £3.85 |
| 9mm Poplar, 600mm x 400mm        |  | 3260  | £6.70 | £6.40 | £6.10 | £5.80 |
| 3mm Birch, 800mm x 600mm         |  | 3274  | £6.65 | £6.35 | £6.05 | £5.75 |
| 3mm Poplar, 800mm x 600mm        |  | 3217  | £5.90 | £5.60 | £5.35 | £5.10 |
| 4mm Poplar, 800mm x 600mm        |  | 32148 | £7.50 | £7.05 | £6.70 | £6.35 |
| 4mm Economy Birch, 800mm x 600mm |  | 32129 | £7.85 | £7.60 | £7.35 | £7.10 |
| 5mm Birch, 800mm x 600mm         |  | 32140 | £9.30 | £8.90 | £8.50 | £8.10 |
| 6mm Poplar, 800mm x 600mm        |  | 3279  | £9.00 | £8.50 | £8.00 | £7.60 |

# BAMBOO

Bamboo is one of the fastest-growing renewable resources in the world. It absorbs CO2 in large quantities. With properties comparable to hardwood, bamboo is the ideal alternative to increasingly scarce tropical hardwoods.

## 5MM BAMBOO PLAIN PRESSED CARAMEL

**NEW!**

600mm x 400mm Sheet



[www.kitronik.co.uk/32104](http://www.kitronik.co.uk/32104)

| Code  | 1+     | 10+    | 100+  | 250+  |
|-------|--------|--------|-------|-------|
| 32104 | £10.50 | £10.00 | £9.75 | £9.45 |

## 5MM BAMBOO SIDE PRESSED CARAMEL

600mm x 400mm Sheet



[www.kitronik.co.uk/3296](http://www.kitronik.co.uk/3296)

| Code | 1+     | 10+    | 100+  | 250+  |
|------|--------|--------|-------|-------|
| 3296 | £10.50 | £10.00 | £9.75 | £9.45 |

## 5MM BAMBOO PLAIN PRESSED NATURAL

**NEW!**

600mm x 400mm Sheet



[www.kitronik.co.uk/32103](http://www.kitronik.co.uk/32103)

| Code  | 1+     | 10+    | 100+  | 250+  |
|-------|--------|--------|-------|-------|
| 32103 | £10.50 | £10.00 | £9.75 | £9.45 |

## 5MM BAMBOO SIDE PRESSED NATURAL

600mm x 400mm Sheet



[www.kitronik.co.uk/3294](http://www.kitronik.co.uk/3294)

| Code | 1+     | 10+    | 100+  | 250+  |
|------|--------|--------|-------|-------|
| 3294 | £10.50 | £10.00 | £9.75 | £9.45 |



## BR GRADE PLYWOOD SHEETS

These are high quality Birch Plywood sheets produced in Finland. The surface of the material is sanded to a smoother finish than that of most plywoods. The 0.8mm, 1.5mm, 2.0mm and 3.0mm versions can be bent (the thinner options are easier to bend) and flexed to create curved designs. This is BR 'veneer' grade Birch Plywood. This is similar to B grade material, showing the natural look of the wood (small knots are allowed) and will show natural colour variations. Suitable for laser cutting as they use an interior glue.



| Description                    |             | Code  | 1+     | 10+    | 100+   | 250+   |
|--------------------------------|-------------|-------|--------|--------|--------|--------|
| 0.8mm BR Grade - 400mm x 300mm |             | 3275  | £4.10  | £3.80  | £3.60  | £3.40  |
| 0.8mm BR Grade - 600mm x 300mm |             | 3276  | £6.20  | £5.80  | £5.50  | £5.20  |
| 0.8mm BR Grade - 600mm x 400mm |             | 3213  | £8.00  | £7.55  | £7.25  | £6.95  |
| 1.5mm BR Grade - 400mm x 300mm |             | 3277  | £3.80  | £3.40  | £3.30  | £3.15  |
| 1.5mm BR Grade - 600mm x 300mm |             | 3278  | £5.70  | £5.35  | £5.00  | £4.75  |
| 1.5mm BR Grade - 600mm x 400mm |             | 3214  | £7.35  | £7.05  | £6.75  | £6.45  |
| 2mm BR Grade - 600mm x 400mm   |             | 3215  | £10.00 | £9.50  | £9.00  | £8.50  |
| 3mm BR Grade - 400mm x 300mm   | <b>NEW!</b> | 32145 | £5.95  | £5.65  | £5.35  | £5.15  |
| 3mm BR Grade - 600mm x 400mm   |             | 3223  | £12.00 | £11.40 | £10.80 | £10.20 |

## CEIBA THIN PLYWOOD SHEETS

These high quality 2mm Ceiba Plywood sheets are suitable for a wide range of applications and are particularly suited to laser cutting. Like our fantastic Poplar plywood sheets, Ceiba is very fast growing and has a much lower density than Birch, meaning that it can be **easily laser cut** at lower power settings.



| Description                       |             | Code  | 1+    | 10+   | 100+  | 250+  |
|-----------------------------------|-------------|-------|-------|-------|-------|-------|
| 2mm Ceiba Plywood - 600mm x 300mm | <b>NEW!</b> | 32134 | £2.40 | £2.30 | £2.20 | £2.10 |
| 2mm Ceiba Plywood - 600mm x 400mm |             | 3262  | £3.20 | £3.00 | £2.85 | £2.70 |
| 2mm Ceiba Plywood - 800mm x 600mm |             | 3292  | £6.40 | £6.00 | £5.70 | £5.40 |

### HOW IS POPLAR DIFFERENT TO BIRCH PLYWOOD?



[www.kitronik.co.uk/birch-poplar](http://www.kitronik.co.uk/birch-poplar)



**BIRCH  
LASER  
PLYWOOD**

**POPLAR  
LASER  
PLYWOOD -  
CLEANER  
CUTTING!**

## OAK AND ASH VENEER PLYWOOD

These Oak and Ash Veneer Plywood Sheets with a Chinese Poplar underside and core are ideal for structural projects requiring a high-quality appearance and finish on the topside and panelling. This product is suitable for applications where a high quality outside surface is needed where visual aspects on the underside are not critical. This is a 'Crown Cut' veneer with an 'A grade' Oak topside and a 'CC (low) grade' Poplar reverse.



[www.kitronik.co.uk/3218](http://www.kitronik.co.uk/3218)

| Description                              | Code              | 1+    | 10+   | 100+  | 250+  |
|--|-------------------|-------|-------|-------|-------|
| 3.6mm Oak Veneer Plywood - 600mm x 400mm | 3218              | £5.30 | £5.00 | £4.75 | £4.50 |
| 3.6mm Oak Veneer Plywood - 400mm x 300mm | <b>NEW!</b> 32105 | £2.60 | £2.50 | £2.40 | £2.25 |
| 3.6mm Oak Veneer Plywood - 600mm x 300mm | <b>NEW!</b> 32106 | £3.85 | £3.70 | £3.55 | £3.40 |
| 3.6mm Oak Veneer Plywood - 800mm x 600mm | <b>NEW!</b> 32107 | £9.60 | £9.30 | £9.00 | £8.80 |
| 3.6mm Ash Veneer Plywood - 600mm x 400mm | <b>NEW!</b> 32122 | £5.40 | £5.20 | £5.00 | £4.80 |
| 3.6mm Ash Veneer Plywood - 600mm x 300mm | <b>NEW!</b> 32123 | £4.20 | £4.00 | £3.80 | £3.60 |

A KITRONIK **FREE** RESOURCE

## PLYWOOD GRADING INFORMATION

We have been working hard on improving the quality of our laser plywood. Our Poplar plywood is now all AB graded – this is one of the top plywood gradings.

For more information on our Poplar plywood and also the plywood grading system, please refer to the links below:



[www.kitronik.co.uk/plywoodgrading](http://www.kitronik.co.uk/plywoodgrading)

[www.kitronik.co.uk/poplarvideo](http://www.kitronik.co.uk/poplarvideo)

## SOLID WOOD SHEETS

**NEW!**


These solid wood sheets measuring **300mm x 100mm x 5mm** are perfectly suited to be cut and engraved on a laser cutter and can also be worked and finished by hand. As these sheets are solid wood, they can also be worked around the edges in a much more pleasing way than is possible with veneered MDF or plywoods.


[www.kitronik.co.uk/32124](http://www.kitronik.co.uk/32124)

[www.kitronik.co.uk/32125](http://www.kitronik.co.uk/32125)

| Description                 | Code  | 1+    | 10+   | 100+  |
|-----------------------------|-------|-------|-------|-------|
| White Oak Solid Wood Sheets | 32124 | £3.50 | £3.35 | £3.25 |
| Cherry Solid Wood Sheets    | 32125 | £3.50 | £3.35 | £3.25 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## DECOFLEX VENEERS

Decoflex is a jointed sheet of veneer that is extremely easy to work with. The jointed veneer sheet is first pressed onto paper. The wood fibres are then broken and finally it is also pre-sanded with a 150 grain. This gives a flexible sheet of high quality wood veneer. The rear face of the veneered sheet is covered in a paper backing that is the same colour as the chosen wood.



Maple veneer ^



Sapele veneer ^

- Key features:**
- Can easily be cut using a laser cutter or sharp knife.
  - Flexible, perfect for curved surfaces.
  - You can glue Decoflex onto any substrate in next to no time.
  - An easy and quick way of finishing the edges of any other type of panel material.

Our range of Decoflex veneers have a nominal 1mm thickness.

| Description                                  | Code | 1+    |
|--|------|-------|
| Flexible Maple veneer sheet – 600mm x 400mm  | 3249 | £8.50 |
| Flexible Maple veneer sheet – 400mm x 300mm  | 3250 | £4.35 |
| Flexible Maple veneer sheet – 300mm x 200mm  | 3251 | £2.30 |
| Flexible Sapele veneer sheet – 600mm x 400mm | 3253 | £8.50 |
| Flexible Sapele veneer sheet – 400mm x 300mm | 3254 | £4.35 |
| Flexible Sapele veneer sheet – 300mm x 200mm | 3255 | £2.30 |



There is a **once per order delivery charge** on all acrylic, cork, Styrofoam, polypropylene, plywood and MDF sheets (including veneered plywood and MDF). In most UK locations this is £6.50, see the front of the catalogue for more information. Standard delivery applies to A4 sized sheets.

## MDF SHEETS

Our Laser Compatible Medite Premier MDF sheets are highly versatile. They are produced using superior wood refining technology and specially designed resins. Benefits are consistency of quality and thickness, as well as reduced tool wear. This product conforms to E1 (low) formaldehyde levels. While there is no official classification for 'Laser Grade' MDF, we believe that E1 conforming MDF is the safest and best MDF for using in a laser cutter.



| Description             |  |  | Code  | 1+    | 10+   | 100+  | 250+  |
|-------------------------|--|--|-------|-------|-------|-------|-------|
| 2mm MDF - 600mm x 300mm |  |  | 32136 | £1.00 | £0.95 | £0.85 | £0.80 |
| 2mm MDF - 600mm x 400mm |  |  | 32135 | £1.25 | £1.15 | £1.10 | £1.05 |
| 2mm MDF - 800mm x 600mm |  |  | 32137 | £2.50 | £2.30 | £2.20 | £2.10 |
| 3mm MDF - 300mm x 200mm |  |  | 3273  | £0.55 | £0.50 | £0.45 | £0.40 |
| 3mm MDF - 400mm x 300mm |  |  | 3257  | £1.00 | £0.90 | £0.85 | £0.80 |
| 3mm MDF - 600mm x 300mm |  |  | 3226  | £1.30 | £1.20 | £1.15 | £1.10 |
| 3mm MDF - 600mm x 400mm |  |  | 3211  | £1.65 | £1.45 | £1.30 | £1.20 |
| 3mm MDF - 800mm x 600mm |  |  | 3227  | £2.75 | £2.60 | £2.45 | £2.35 |
| 4mm MDF - 400mm x 300mm |  |  | 3268  | £1.00 | £0.95 | £0.90 | £0.85 |
| 4mm MDF - 600mm x 300mm |  |  | 3269  | £1.50 | £1.40 | £1.30 | £1.25 |
| 4mm MDF - 600mm x 400mm |  |  | 3229  | £1.90 | £1.80 | £1.70 | £1.60 |
| 4mm MDF - 800mm x 600mm |  |  | 3230  | £3.45 | £3.25 | £3.05 | £2.85 |
| 6mm MDF - 400mm x 300mm |  |  | 3258  | £1.55 | £1.35 | £1.20 | £1.10 |
| 6mm MDF - 600mm x 300mm |  |  | 3232  | £1.90 | £1.80 | £1.70 | £1.55 |
| 6mm MDF - 600mm x 400mm |  |  | 3212  | £2.80 | £2.60 | £2.40 | £2.25 |
| 6mm MDF - 800mm x 600mm |  |  | 3233  | £4.45 | £4.20 | £3.95 | £3.60 |
| 9mm MDF - 600mm x 400mm |  |  | 3235  | £3.40 | £3.15 | £2.95 | £2.70 |
| 9mm MDF - 800mm x 600mm |  |  | 3236  | £6.60 | £6.15 | £5.80 | £5.35 |



Minimum order quantities apply to 800 x 600mm sheets.

Please refer to the website for details: [www.kitronik.co.uk/800x600](http://www.kitronik.co.uk/800x600)

## VENEERED MDF

These high quality veneers are an excellent example of a composite material, using natural timber Hardwoods for their decorative properties and a manufactured timber (laser compatible MDF) core for ease of use. These materials can be easily sawn, milled and laser cut. The hardwood surface is unfinished and can be oiled, waxed, or varnished.



^ Oak



^ American Maple



^ Black Walnut



^ Cherry



^ Steamed Beech



^ Ash

 Green rows mark our **NEW!** sizes

| Description                          | Code  | 1+     | 10+    | 100+   | 250+   |
|--------------------------------------|-------|--------|--------|--------|--------|
| 4mm Oak Veneered MDF - 300mm x 200mm | 32102 | £1.75  | £1.65  | £1.55  | £1.45  |
| 4mm Oak Veneered MDF - 400mm x 300mm | 3266  | £3.10  | £2.95  | £2.80  | £2.65  |
| 4mm Oak Veneered MDF - 600mm x 300mm | 3263  | £4.65  | £4.35  | £4.15  | £3.95  |
| 4mm Oak Veneered MDF - 600mm x 400mm | 3219  | £6.20  | £5.90  | £5.70  | £5.40  |
| 4mm Oak Veneered MDF - 800mm x 600mm | 3270  | £12.50 | £11.50 | £11.00 | £10.50 |
| 6mm Oak Veneered MDF - 400mm x 300mm | 32151 | £6.40  | £6.10  | £5.80  | £5.50  |
| 6mm Oak Veneered MDF - 600mm x 300mm | 32150 | £9.80  | £9.30  | £8.80  | £8.30  |
| 6mm Oak Veneered MDF - 600mm x 400mm | 3245  | £13.00 | £12.25 | £11.50 | £11.00 |

| Description                                     | Code  | 1+     | 10+    | 100+   | 250+   |
|---|-------|--------|--------|--------|--------|
| 4mm American Maple Veneered MDF - 600mm x 400mm | 3283  | £6.10  | £5.80  | £5.55  | £5.30  |
| 4mm American Maple Veneered MDF - 300mm x 200mm | 32119 | £1.70  | £1.60  | £1.55  | £1.50  |
| 4mm American Maple Veneered MDF - 400mm x 300mm | 32120 | £3.45  | £3.30  | £3.15  | £3.00  |
| 4mm American Maple Veneered MDF - 800mm x 600mm | 32121 | £13.20 | £12.60 | £12.10 | £11.75 |

| Description                                   | Code  | 1+     | 10+    | 100+   | 250+   |
|---|-------|--------|--------|--------|--------|
| 4mm Black Walnut Veneered MDF - 300mm x 200mm | 32110 | £2.10  | £2.00  | £1.90  | £1.80  |
| 4mm Black Walnut Veneered MDF - 400mm x 300mm | 32111 | £4.20  | £4.00  | £3.80  | £3.60  |
| 4mm Black Walnut Veneered MDF - 600mm x 400mm | 3280  | £8.70  | £8.20  | £7.80  | £7.40  |
| 4mm Black Walnut Veneered MDF - 800mm x 600mm | 32112 | £15.80 | £15.30 | £14.80 | £14.40 |
| 6mm Black Walnut Veneered MDF - 600mm x 400mm | 3246  | £10.05 | £9.85  | £8.90  | £7.90  |

| Description                             | Code  | 1+    | 10+   | 100+  | 250+  |
|---|-------|-------|-------|-------|-------|
| 4mm Cherry Veneered MDF - 300mm x 200mm | 32108 | £1.65 | £1.50 | £1.45 | £1.40 |
| 4mm Cherry Veneered MDF - 400mm x 300mm | 32109 | £2.65 | £2.40 | £2.30 | £2.20 |
| 4mm Cherry Veneered MDF - 600mm x 300mm | 3284  | £3.95 | £3.85 | £3.70 | £3.65 |
| 4mm Cherry Veneered MDF - 600mm x 400mm | 3259  | £4.50 | £4.30 | £4.15 | £4.00 |
| 4mm Cherry Veneered MDF - 800mm x 600mm | 3285  | £9.55 | £9.35 | £9.15 | £8.95 |
| 6mm Cherry Veneered MDF - 600mm x 400mm | 32149 | £5.15 | £4.85 | £4.65 | £4.50 |

| Description                                    | Code  | 1+     | 10+    | 100+   | 250+   |
|--|-------|--------|--------|--------|--------|
| 4mm Steamed Beech Veneered MDF - 300mm x 200mm | 32116 | £1.60  | £1.50  | £1.45  | £1.35  |
| 4mm Steamed Beech Veneered MDF - 400mm x 300mm | 32117 | £3.15  | £2.95  | £2.80  | £2.70  |
| 4mm Steamed Beech Veneered MDF - 600mm x 400mm | 3282  | £5.20  | £4.85  | £4.65  | £4.40  |
| 4mm Steamed Beech Veneered MDF - 800mm x 600mm | 32118 | £12.00 | £11.50 | £11.10 | £10.80 |

| Description                          | Code  | 1+     | 10+    | 100+   | 250+   |
|--------------------------------------|-------|--------|--------|--------|--------|
| 4mm Ash Veneered MDF - 300mm x 200mm | 32113 | £1.60  | £1.50  | £1.45  | £1.35  |
| 4mm Ash Veneered MDF - 400mm x 300mm | 32114 | £3.15  | £2.95  | £2.80  | £2.70  |
| 4mm Ash Veneered MDF - 600mm x 400mm | 3256  | £6.20  | £5.90  | £5.60  | £5.30  |
| 4mm Ash Veneered MDF - 800mm x 600mm | 32115 | £11.80 | £11.40 | £11.00 | £10.70 |
| 6mm Ash Veneered MDF - 600mm x 400mm | 3247  | £8.00  | £7.55  | £7.05  | £6.50  |

| Description                           | Code  | 1+    | 10+   | 100+  | 250+  |
|---------------------------------------|-------|-------|-------|-------|-------|
| 4mm Pine Veneered MDF - 600mm x 400mm | 32101 | £4.25 | £4.00 | £3.85 | £3.65 |

**NOTICE:** Prices accurate as per September 2021. Please check our website for current pricing.

## CORK SHEETS

These high quality and versatile cork sheets are a fantastic and ecofriendly material that can be laser cut/engraved. **Sheet size 600mm x 400mm.** Available in 1mm and 3mm, with and without adhesive backing.

### 1MM LASER CORK SHEET



[www.kitronik.co.uk/3289](http://www.kitronik.co.uk/3289)

| Code | 1+    | 10+   | 100+  | 250+  |
|------|-------|-------|-------|-------|
| 3289 | £2.95 | £2.75 | £2.55 | £2.25 |

### 1MM LASER CORK SHEET WITH ADHESIVE BACKING



[www.kitronik.co.uk/3290](http://www.kitronik.co.uk/3290)

| Code | 1+    | 10+   | 100+  | 250+  |
|------|-------|-------|-------|-------|
| 3290 | £6.95 | £6.75 | £6.35 | £5.95 |

### 3MM LASER CORK SHEET



[www.kitronik.co.uk/3287](http://www.kitronik.co.uk/3287)

| Code | 1+    | 10+   | 100+  | 250+  |
|------|-------|-------|-------|-------|
| 3287 | £4.45 | £4.25 | £3.95 | £2.95 |

### 3MM LASER CORK SHEET WITH ADHESIVE BACKING



[www.kitronik.co.uk/3288](http://www.kitronik.co.uk/3288)

| Code | 1+    | 10+   | 100+  | 250+  |
|------|-------|-------|-------|-------|
| 3288 | £9.95 | £9.45 | £8.95 | £8.45 |

## 3MM CORK SHEETS

These high quality and highly versatile 3mm Cork sheets, measuring 915mm x 610mm, are one of the most eco-friendly raw materials on the planet and they also offer a wide range of Design and Technology applications. They are suitable for laser cutting and laser engraving and as such, it can be cut into intricate shapes very easily and then laser decorated.

If you wanted to plan a lesson on raw material sustainability then there is NO other material that is better suited to serving as a positive example. The Cork industry is regarded as being very environmentally friendly as the tree that the bark comes from continues to grow and thrive after the bark is removed. Cork is also 100% recyclable.



[www.kitronik.co.uk/3264](http://www.kitronik.co.uk/3264)

Supplied rolled

| Description                    | Code | 1+    | 10+   | 100+  | 250+  |
|--------------------------------|------|-------|-------|-------|-------|
| 3mm Cork Sheet - 915mm x 610mm | 3264 | £4.95 | £4.60 | £4.25 | £3.75 |

**DID YOU KNOW?**  
**Cork is sustainable** because it is harvested from the live tree without cutting it down!

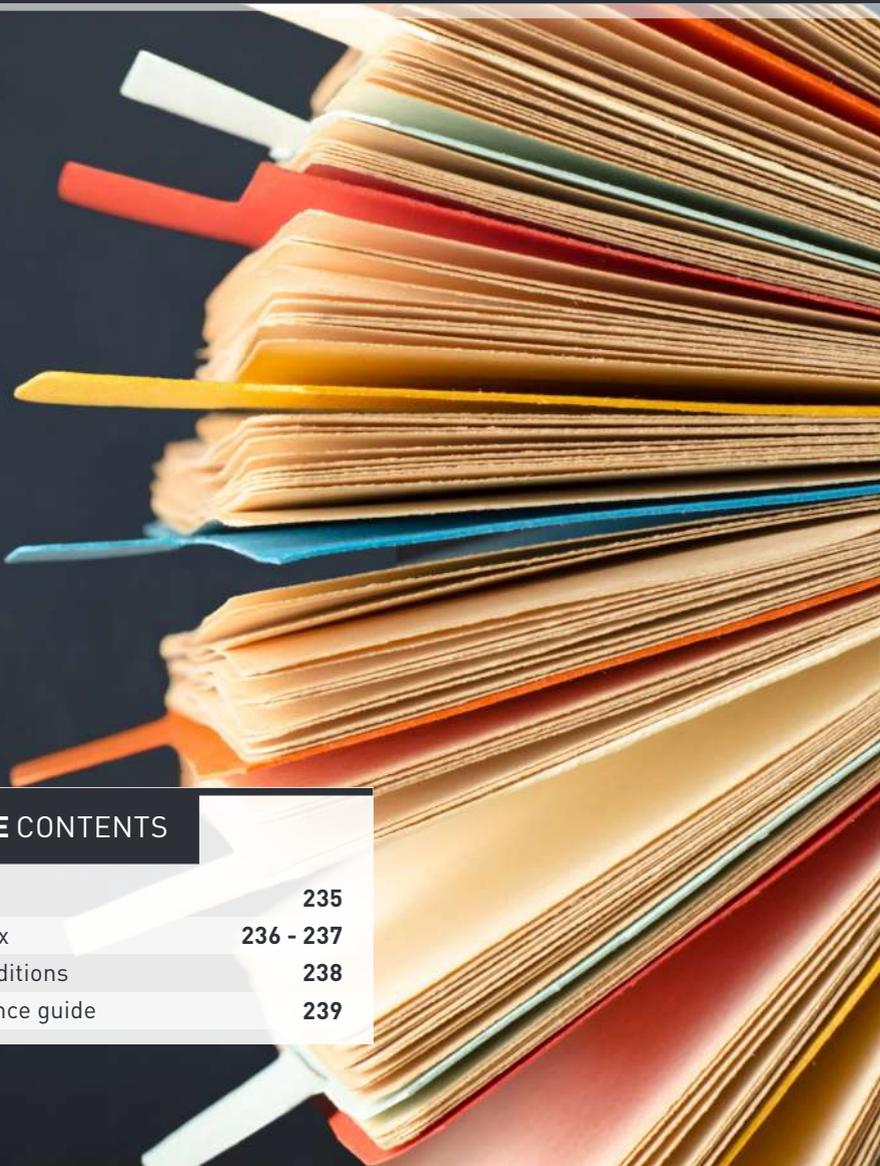
# RAPID NEXT DAY DELIVERY

WHEN YOU ORDER BEFORE 3PM\*

Our large scale warehouse allows us to hold a significant amount of stock, which dramatically reduces the chances of any out of stock items, even in the busy periods!

\*Order by 3:00pm for same day dispatch and usually next day delivery.  
 See [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for full details.

# RESOURCES KIT SELECTOR, INDEX & GUIDES



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|      |                                    | Switches | Switch debounce | LDRs | Thermistors | Resistors | Potential divider | Capacitors | Thyristors as a latch | Op amps as comparators | Op amps as amplifiers | Logic gates | PICs | Transistors | Darlington pair | FETs | Monostable (555) timer | Astable (555) timer | Counter ICs | LEDs | Buzzer | Speaker | 7 Segment Displays | Motors |  |
|------|------------------------------------|----------|-----------------|------|-------------|-----------|-------------------|------------|-----------------------|------------------------|-----------------------|-------------|------|-------------|-----------------|------|------------------------|---------------------|-------------|------|--------|---------|--------------------|--------|--|
| 2101 | Alarm                              | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             |                 |      | ●                      |                     |             | ●    | ●      |         |                    |        |  |
| 2102 | Battery tester                     |          |                 |      |             | ●         | ●                 |            |                       | ●                      | ●                     |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2103 | Electronic game                    | ●        |                 |      |             | ●         |                   |            |                       |                        |                       |             | ●    |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2104 | Timer                              | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             |                 |      | ●                      |                     |             |      | ●      | ●       |                    |        |  |
| 2105 | Xylophone                          |          |                 |      |             | ●         | ●                 |            |                       |                        |                       | ●           | ●    |             |                 |      |                        |                     |             |      |        |         | ●                  |        |  |
| 2106 | Rear bike light                    |          |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      | ●           |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2107 | Steady hand game (no solder)       |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        | ●       |                    |        |  |
| 2108 | Steady hand game (with latch)      | ●        |                 |      |             | ●         |                   |            | ●                     |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      | ●       |                    |        |  |
| 2109 | Dice                               | ●        |                 |      |             | ●         |                   |            |                       |                        |                       | ●           |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2110 | Thermometer                        |          |                 |      | ●           | ●         | ●                 |            |                       |                        |                       | ●           |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2111 | Easy build timer                   | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             | ●    |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2112 | Light activated switch             |          |                 | ●    |             | ●         | ●                 |            |                       |                        |                       |             |      |             | ●               |      |                        |                     |             |      |        |         |                    |        |  |
| 2113 | Temperature activated switch       |          |                 |      | ●           | ●         | ●                 |            |                       |                        |                       |             |      |             | ●               |      |                        |                     |             |      |        |         |                    |        |  |
| 2114 | White LED torch                    | ●        |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2116 | Quiz buzzer                        | ●        |                 |      |             | ●         |                   |            | ●                     |                        |                       | ●           |      | ●           |                 |      |                        |                     |             |      | ●      | ●       |                    |        |  |
| 2117 | 555 Astable (tone generator)       | ●        |                 |      |             | ●         | ●                 | ●          |                       |                        |                       |             |      |             |                 |      |                        | ●                   |             |      |        |         | ●                  |        |  |
| 2120 | Dark activated colour changing LED |          |                 | ●    |             | ●         | ●                 |            |                       |                        |                       |             |      |             | ●               |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2122 | Programmable music box             | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       | ●           |      |             |                 |      |                        |                     |             |      | ●      |         | ●                  |        |  |
| 2123 | Air freshener                      | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             | ●               |      |                        |                     |             |      | ●      |         |                    | ●      |  |
| 2131 | Colour changing USB lamp           | ●        |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2132 | White USB lamp                     | ●        |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2133 | Light up decoration                | ●        |                 |      |             |           |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2134 | Solar garden light                 |          |                 |      |             | ●         | ●                 | ●          |                       |                        |                       |             |      | ●           |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2136 | Stereo amplifier                   |          |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         | ●                  |        |  |
| 2139 | Timed night light                  |          |                 | ●    |             | ●         | ●                 | ●          |                       |                        |                       |             |      |             | ●               |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2140 | Wireless steady hand game          |          |                 |      |             | ●         |                   |            |                       |                        | ●                     |             |      |             |                 |      |                        |                     |             |      | ●      | ●       |                    |        |  |
| 2141 | Deluxe stereo amplifier            | ●        |                 |      |             | ●         | ●                 | ●          |                       |                        |                       | ●           |      |             |                 |      |                        |                     |             |      | ●      |         | ●                  |        |  |
| 2143 | High power stereo amplifier        | ●        |                 |      |             | ●         | ●                 | ●          |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         | ●                  |        |  |
| 2144 | Relay board                        |          |                 |      |             | ●         | ●                 | ●          |                       | ●                      |                       |             |      |             |                 | ●    |                        |                     |             |      | ●      |         |                    |        |  |
| 2145 | Coin cell power board              | ●        |                 |      |             |           |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         |                    |        |  |
| 2146 | LED picture frame                  | ●        |                 |      |             | ●         | ●                 | ●          |                       |                        |                       |             |      |             | ●               |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2148 | Squeezy torch                      |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2149 | Record playback                    | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         | ●                  |        |  |
| 2150 | Vibrobug - red                     | ●        |                 |      |             |           |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         |                    | ●      |  |
| 2151 | Vibrobug - black                   | ●        |                 |      |             |           |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         |                    | ●      |  |
| 2155 | 5V LED matrix lamp - square        |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2157 | FM radio                           |          |                 |      |             | ●         | ●                 | ●          |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         | ●                  |        |  |
| 2158 | 3W class D stereo amplifier        |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         | ●                  |        |  |
| 2161 | Micro USB lamp                     |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2162 | USB fan                            | ●        |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         |                    | ●      |  |
| 2163 | Learn to solder                    |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2165 | Mono amplifier                     |          |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      |        |         | ●                  |        |  |
| 2167 | Deluxe rear bike light             | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      | ●           |                 | ●    |                        | ●                   |             |      | ●      |         |                    |        |  |
| 2169 | 5V LED matrix lamp - round         |          |                 |      |             | ●         |                   |            |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |
| 2175 | Solar torch                        | ●        |                 |      |             | ●         |                   | ●          |                       |                        |                       |             |      |             |                 |      |                        |                     |             |      | ●      |         |                    |        |  |

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Simple Robotics Kit

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Smart Greenhouse Kit

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## Bike Light Kits

Rear Bike Light Kit

Deluxe Bike Light Kit

Breakouts, Boards &amp; Sensors

Buggy Project Kits

## C

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Callipers

Capacitors

Casters

Circuit Prototyping

Clocks &amp; Accessories

Coin Cell Power Board

Colour Changing Mood Light

Component Kits

Cork

Cyberpet Kit

## D

Dark Activated Colour Changing LED Kit

Dice Project Kit

Dice Kit

Door Contact

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Conductive Thread &amp; Fabric

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### Prices and ordering

- 1.1** Orders must be placed by mail, telephone, fax, email or online.
- 1.2** Prices are exclusive of VAT.
- 1.3** When an order is made by telephone written confirmation is NOT required. If You choose to send written confirmation of an order you must ensure that the order is clearly endorsed "confirmation". Not endorsing the confirmation will result in the order being duplicated. You will then be responsible for settlement of the duplicated order.
- 1.4** If an item is not in stock you will be advised within 48 hours of receipt of your order. You will be offered an alternative product or you may cancel your order.

### Delivery

- 2.1** Free delivery applies to most UK mainland locations (except for acrylic, HIPS, Styrofoam, polypropylene, cork, plywood and MDF sheets, including veneered plywood and MDF) subject to a minimum value of £40.00. On all orders below £40.00 carriage will be charged at £3.95. Any order for Perspex®, HIPS, plywood, MDF, veneers, Styrofoam and polypropylene for mainland UK delivery will be charged at £6.50 per order.
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- 3.2** In the event of default the Company reserves the right to charge interest at the rate of four percent above current HSBC Bank Base Rate or the statutory rate conferred by The Late Payment of Commercial Debts (Interest) Act 1998 at monthly intervals on the overdue portion of the account and to suspend or cancel the contract in respect of any undelivered Goods.

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### Guarantee

- 5.1** Unless otherwise specified and subject to clause 5.2, the Goods are guaranteed against defect caused by faulty materials or workmanship for a period of 12 months from the date of despatch.
- 5.2** The Guarantee is given provided that:
- (a) Kitronik are promptly notified in writing upon discovery that the Goods are defective due to faulty materials or workmanship;
- (b) the faulty goods are returned to Kitronik within 12 months from the date of despatch. They shall

be accompanied by proof of purchase (delivery note or invoice) and details of the nature of the defect.

(c) The Goods have been paid for in full.

(d) examination by Kitronik confirms that the suspected defect has not been caused by normal wear and tear, wilful damage, negligence, misuse, neglect, method of storage, faulty installation, faulty handling, testing or repair (without Kitronik approval), using the Goods in a manner which could not reasonably be expected during normal use or outside of the manufacturer's operating instructions.

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- 6.1** Kitronik's liability under the Guarantee shall be limited to replacing, repairing or issuing credit.
- 6.2** Except in respect of death or personal injury caused by the Kitronik's negligence, or liability for defective products under the Consumer Protection Act 1987, the Company shall not be liable to the Purchaser by reason of any representation (unless fraudulent), or any implied warranty, condition or other term, or any duty at common law, or under the express terms of the Contract, for loss of profit or for any indirect, special or consequential loss or damage, costs, expenses or other claims for compensation whatsoever (whether caused by the negligence of the Company, its employees or agents or otherwise) which arise out of or in connection with the supply of the Goods (including any delay in supplying or any failure to supply the Goods in accordance with the Contract or at all) or their use or resale by the Purchaser, and the entire liability of the Company under or in connection with the Contract shall not exceed the price of the Goods, except as expressly provided in these terms and conditions.
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- 6.5** Kitronik shall not be liable for incidental or consequential damages for any breach hereof, including but not limited to costs of removal and re-installation of Goods, loss of goodwill, loss of profits or loss of use.
- 6.6** Nothing shall limit Kitronik's liability in respect

of death or personal injury caused by Kitronik's own negligence.

### Returns

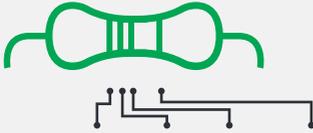
- 7.1** Other than Goods returned under Guarantee or for shortages or damages, returns will require Kitronik's prior Agreement and will only be accepted in the original packaging. A 25% handling charge with a minimum charge of £3.00 will be applied. Goods must be returned within 30 days of the date of delivery.
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- 7.3** If Goods are returned You must quote the delivery note number in full.
- 7.4** Where Kitronik accept that there has been a shortage in Goods despatched or the Goods have been damaged in transit, Kitronik will replace the Goods or offer a full refund if no replacement is available.
- 7.5** Order Cancellation: Cancellation of an order will only be accepted after prior agreement. Kitronik will not accept cancellation for any items ordered specially by Kitronik on Your behalf.

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- 8.1** Dimensions and other ratings with relation to the products supplied are subject to normal tolerances. Unless otherwise stated, electrical ratings represent safe working limits.
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- 8.3** If any provision of the Contract is held by a court or other competent authority to be invalid or unenforceable in whole or in part the validity of the other provisions of the Contract and the remainder of the provision in question shall not be affected.
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- 8.5** The contractual terms governing any agreement or contract (the "Contract") between Kitronik Ltd and those purchasing ("You", "you" or the "Purchaser") goods from the Company are contained exclusively within these terms and conditions which shall apply to all Contracts. The Contract shall to be governed by and construed in accordance with the laws of England and Wales whose courts shall have non-exclusive jurisdiction in connection with any dispute arising out of or in connection with it.
- 8.6** All images are used for illustration purposes only.

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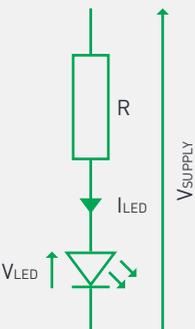
### RESISTOR VALUES



| Colour   | 1 <sup>st</sup> | 2 <sup>nd</sup> | X      | Tol |
|----------|-----------------|-----------------|--------|-----|
| ● Black  | 0               | 0               |        |     |
| ● Brown  | 1               | 1               | 0      | ±1% |
| ● Red    | 2               | 2               | 00     | ±2% |
| ● Orange | 3               | 3               | 000    |     |
| ● Yellow | 4               | 4               | 0000   |     |
| ● Green  | 5               | 5               | 00000  |     |
| ● Blue   | 6               | 6               | 000000 |     |
| ● Purple | 7               | 7               |        |     |
| ● Grey   | 8               | 8               |        |     |
| ○ White  | 9               | 9               |        |     |
| ● Gold   |                 |                 | ÷ 10   | ±5% |
| ● Silver |                 |                 | ÷ 100  |     |

1k = 1,000 Ω    1M = 1,000,000 Ω

### LED CURRENT LIMIT RESISTORS



$$R = \frac{V_{\text{SUPPLY}} - V_{\text{LED}}}{I_{\text{LED}}}$$

Typical  $V_{\text{LED}} = 1.8\text{V}$   
 Typical  $I_{\text{LED}} = 10$  to  $20\text{mA}$

### OHM'S LAW

$$V = I \times R$$

Whereby: **V** = Voltage (in Volts)  
**I** = Current (in Amps)  
**R** = Resistance (in Ohms – Ω)

### CERAMIC DISC CAPACITORS



Value is in pico Farads (pF)  
 Example shown: 10,000pF

10  
Value

3  
Zeros

1 nF = 1,000pF  
 1 μF = 1,000,000pF

### CATALOGUE REFERENCE KEY

|  |                       |
|--|-----------------------|
|  | Exclusive to Kitronik |
|  | Teaching notes        |
|  | Key Stage 2/3         |
|  | Key Stage 3           |
|  | Key Stage 3/4         |
|  | Key Stage 4           |
|  | Added information     |
|  | Battery requirements  |
|  | Dimensions            |
|  | Web URL               |



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\*Order by 3:00pm for same day dispatch & usually next day delivery. See [www.kitronik.co.uk/delivery-info](http://www.kitronik.co.uk/delivery-info) for details.

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